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Gleanings in BEE CULTURE

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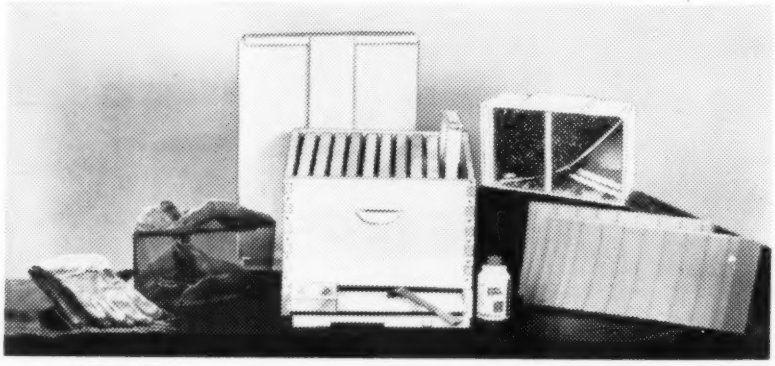

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Gleanings in Bee Culture

August, 1959 Vol. 87, No. 8

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Subscription Rates: United States, Canada, Pan American countries, and Spain, one year, $2.00; two years, $3.50; three years, $5.00. Single copy, 20¢. Other countries, 50¢ per year additional for postage. Published monthly. Discontinuance: Subscriptions stopped on expiration. No subscriber will be run into debt by us for this journal. Change of Address: Give your old address as well as the new and write the name to which the journal has heretofore been addressed. Remittance should be sent by post office money order, bank draft, express money order or check. Contributions to Gleanings columns solicited. S amps should be enclosed to insure return of manuscript to author if not printed. Advertising Rates: Advertising rates and conditions will be sent on request. Results from advertising in this journal are remarkably satisfactory. Advertisers' Reliability: While the publishers do not guarantee advertisements in this journal they use utmost diligence to establish in advance the reliability of every advertiser using space in this journal.

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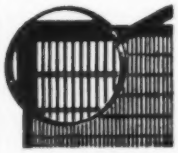

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Picayune, Mississippi, U.S.A.

Monthly HONEY Report

WALTER BARTH
Field Editor
San Antonio, Texas

IT WAS AT a bee meeting last November that E. B. Ault, Weslaco, Texas, first brought the Karo advertisements to my attention. Another similar advertisement appeared later, and both were published in this column to get opinions and reaction. Well, we got them as the beekeepers became aroused. Subsequently, the American Beekeeping Federation filed a protest with the Federal Trade Commission. And now the FEDERATION NEWS LETTER reports that the protest has been **turned down.**

I hope that the action of the Federal Trade Commission will stir readers into action. First by using **American Honey Institute Literature** freely, and secondly, by supporting the **Library Advertising Campaign.** Give two or more copies of the Institute's large honey recipe book to your local library. Just for the investment of a dollar for two recipe books you can get some efficient honey advertising into the right hands . . . .those of the housewife. The need in our libraries for honey recipes is great. Your contributions will be warmly received and appreciated, and the list of your name as a donor will bring personal advertising.

New Product

The Kretchmer Company, packers of Wheat Germ for many years, has now introduced a new wheat germ breakfast cereal called, "Sugar'n Honey". We tried some in our home and it is good . . . especially as a nut-flavor topping on vanilla ice cream. Then cover with honey and you have a treat. It sure is good.

All of us are interested in honey grading, I am sure. Hence it is of value to know that a new bulletin, "Grading Kansas and Other United States Honeys" is available from the Kansas Agricultural Experiment Station. Just ask for Kansas State College Agricultural Experiment Station Progress Report No. 25 (July 1958).

It is my understanding that steel drums will be required for storage this year but this will bear further investigation. However, the need for steel drums has come up because of the damage and rust developing with the handling of the standard tin 60 pound cans. In this regard it is good to learn that work is going on to develop bulk plastic containers, and the research is already in the testing stage.

Honey prices have remained fairly steady since my last report but with only a fair demand for honey in most places. Better grades of honey in the new crop appearing in the South and Southwest are bringing 10 to 11½¢ per pound. This is slightly less than was received last year at this time. The beeswax market is quiet with no price changes. Beeswax is bringing 40¢ on the West Coast and 42¢ eastward. The two cents per pound bonus is still available in trade as a rule.

Condition of bees varies throughout the country from fair to "just about ready for the flow". Moisture seems to be ample, although California could use more rain. North Carolina reports excessive swarming. New York reports a changing agriculture with the appearance of more and more wasteland to support weed honey plants. Perhaps goldenrod and aster honeys will appear in more abundance to take the place of New York's dwindling buckwheat honey crops. If readers have noticed a similar trend, please let us hear about it.

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The Millard Coggshall family at extracting time. In rear is Mr. Brown Coggshall of Groton, N. Y., who spends the winter in Minneola, Florida. Carol, left, helps her mother, while son David places combs in the extractor.

Beekeepers for Three Generations

This is the story of a third generation beekeeper, Mr. Millard Coggshall of Minneola, Florida, and of one of the most colorful and dedicated beekeeping families in America. There have been nine beekeepers in the family — all starting in or near Groton, New York.

H. J. RAHMLOW
St. Petersburg, Florida

BACK IN THE 1890's, grandfather William L. Coggshall, operating a 240-acre, dairy, sheep, and grain farm, also became the most extensive beekeeper in America. His methods and operations were described in the December 15, 1908 issue of Gleanings in Bee Culture, by his good friend Mr. E. R. Root. At one time Mr. Coggshall operated from 2,000 to 3,000 colonies

in New York, Colorado, New Mexico, and Cuba. His brother David, also had about 400 colonies at Groton.

Grandfather William Coggshall had two sons, Archie and Brown, who continued the business, and one daughter Nellie, who married a beekeeper—Mr. Elton Lane. All three had sons who went into beekeeping commercially. Brown is the father of Millard, and began beekeeping in 1912. He is still active and has had from 900 to 1200 colonies around Groton. He now spends the winter months in Minneola, Florida.

Beekeeping in the 1890's

Operating several thousand colonies in the 1890's, during the horse and wagon and bicycle days, must have taken expert management. Mr. E. R. Root stated in Gleanings that from 50 to 100 colonies were kept in each outyard and they extended as far as 20 miles from home. At each yard was a small building with complete extracting equipment. Often the crew would extract honey at two yards in a single day (surely not an eight-hour day). The helpers would ride ahead on bicycles while one man would follow with team and wagon with supplies. Working in distant yards they might stay out all week. The extractors were of the "Coggshall" type, non-reversible and hand operated.

"Black" bees were kept in those early days. They were so vicious that it was said thefts never occurred. An account of how the men removed honey from those black bees, published in the Ithaca Journal, makes one wonder if modern equipment is so effective after all—were it not for the fact that only a few acquire the dexterity and speed these men developed. The hives were ripped open or even kicked open, if a kick would do it more quickly. Smoke was blown between the frames and combs jerked out. With a certain motion the bees were almost all shaken off—the rest swept off with a long whisk broom. One of these "lightning" operators and two boys took off 1400 pounds of honey in one and a quarter hours.

Mr. E. R. Root tells how Mr. Wm. Coggshall subdued an ugly bull on the farm. One day the bull was about to charge him. He grabbed up a hive of bees from its bottom board and as the bull closed in he threw the hive on the ground in front of the bull who roared, rubbed his nose in the grass and then ran wildly away in utter defeat; also sadder and wiser.

Wm. Coggshall passed away in 1927. His sons, Archie and Brown, had divided the bees and the 240 acre farm had been sold. Since not many farmers with that much land sell out in favor of beekeeping we were somewhat surprised and asked Millard why. He said quite frankly, "They felt there was more money in beekeeping and they liked it better".

Good Crops from Buckwheat

In the early days around Groton, New York, buckwheat was grown on almost every farm. Honey from clover and basswood was uncertain but buckwheat honey was "money in the bank," because it seldom failed. Millard's father, Mr. Brown Coggshall operating from 900 to 1200 colonies was quite successful although he says he has sold honey for as low as two cents a pound wholesale, but it went to 20 cents during World War I.

The market for buckwheat honey was chiefly in New York City to supply the bakeries for making Jewish holiday and feast breads. Sometimes a Rabbi would come out to inspect the honey to see that it met Kosher requirements. The buckwheat honey was delivered in 20 gallon kegs of pine.

The Coggshalls were instrumental in starting the Finger Lakes Honey Producers' Co-op with Mr. Brown Coggshall doing much of the remodeling work in the buildings in which the Co-op started and has operated in Groton. Up to four and one-half million pounds of honey per year have been processed, much of it put up in the Dyce Process crystallized form. About two million pounds are being handled in late years because production has dropped since buckwheat was largely replaced by dry beans.

Honey Marketing

The Co-op was the first to go into large scale marketing of the Dyce Process crystallized honey when Dr. E. J. Dyce came from Toronto, Ontario and became the first manager of the Finger Lakes Honey Producers' Co-op in about 1939. Crystallized honey had become quite popular in Canada and almost 75 per cent of its honey was

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The hive loader saves more labor than any other piece of equipment, says Millard Coggshall. All colonies are moved two or three times each season. Note citrus tree covered hills in the background.

put up in that form. New York beekeepers felt that it might prove another good way to sell honey and create a new demand. During the war years when the demand was good the co-op stipulated that 50 per cent of its honey be put up in crystallized form. However, demand dropped after the war and only from 10 to 20 per cent is crystallized now.

It is really not hard to sell honey, Millard Coggshall says. The best place is in the extracting building if it is clean and suitable. Next best is the fruit stand where only fruit and honey are sold. Fancy gift shops are not as good because mark-up is high and there are many competitive items.

From New York to Florida

Why did Millard Coggshall leave Groton, New York and come to Florida? Changes in New York farming methods constitute the underlying reason. Very little buckwheat is being grown today and the clovers are less dependable than ever, with Ladino used in pastures producing very little nectar.

Millard started beekeeping with his father in 1937. In 1939 he spent a winter vacation in Florida and became interested in its beekeeping possibilities. He started bringing down about 50 colonies in a pick-up truck and ran them until mid-April; then made four frame nuclei, gave them a young queen and took them back to Groton. They built up rapidly and the venture proved quite successful. He expanded and soon was taking back 300 nuclei in a big truck. Crops however, continued to be unsatisfactory in New York state.

Florida Beekeeping

In 1949 Millard and his family came to Florida permanently. By that time they had become familiar with Florida beekeeping methods and had discovered that they liked the Florida summer weather. Northerners won't believe this, but Millard says "We like it here in summer better than in winter. The weather is quite steady and we don't need to exert ourselves". They might have come down sooner if they had believed this earlier. Summer is now their vacation time.

A load of about 80 colonies on its way to a new location about 175 miles away. Note plastic screen cover. Entrances are open, but bees cannot leave the load. Stacks are tied on with ropes.

The new year begins here in January when the bees build up for the citrus flow. Oranges are best for honey and bloom from late February to early April. This year the flow ended about March 20. This is the busy time of year. Honey must be taken off and extracted because the bees must be moved to another crop; in Millard's case, palmetto, which may begin to bloom in late April. Empty supers are needed for the next crop. Often the honey is removed from a yard, the bees loaded onto the truck and moved in the morning before daylight.

With 800 colonies to move, the Coggshalls are busy people. Mrs. Coggshall does most of the uncapping. Some extra help is employed. The Coggshalls have one of the largest, neatest, and most efficient extracting plants we have seen in Florida. Mrs. Coggshall especially likes the hive elevator, shown in the picture. It eliminates a lot of bending in lifting frames during a hard day's work.

Citrus is Big Business

Is it necessary to move the bees? In some places one does see small orange groves, palmetto or other honey plants growing side by side, but in the important orange growing areas the acreage is so large there is little room for other nectar producing plants. Around Minneola and southward in Florida one can drive for a hundred miles and see groves on each side of the road reaching to the horizon. Unless you have seen it, it is difficult to comprehend. Florida alone produces almost twice as many oranges and grapefruit as there are apples produced in the entire United States. With such an extensive production it would seem there would be room for more bees than exist, but good locations are now almost impossible to find. Many thousands of colonies are being moved in from other parts of Florida and states to the north. A beekeeper recently told us that one morning when he came to a yard in a grove he found someone had placed a yard of 70 colonies within 500 feet of his bees. One can only be safe if careful arrangements are made with the owners of the land. However, oranges do not require bees for pollination so grove owners may not be interested in bees.

This year good colonies averaged about 30 pounds of honey from citrus. In good years they may produce 75 pounds per colony. Only one brood chamber is used with an average of about three honey supers. That is why extracting is a rush job; to get the supers empty for the next honey flow.

Millard Coggshall assures us that northern beekeeping methods can't be

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used here. For instance, I examined colonies here in February, March, and April this year and remarked to Millard that our outdoor wintered colonies near Madison, Wisconsin, usually had a larger bee population during these months than many I had seen here. He agreed this might be possible and admitted the big problem in Florida is to stimulate brood rearing in December and January to get strong colonies for the orange flow. He has tried various methods, including moving to an early source of nectar. He remarked however, "If you find a way to stimulate early brood rearing, let me know".

Work with Bees the Year Around

"We used to enjoy some time off during the winter in New York State", said Millard, "But here we work with our bees the year around." Palmetto honey is extracted in June. Then there is a little time off or the work is easier. The cabbage palm blooms in July and August so the bees are left in the palmetto location. Some beekeepers move to mangrove which is a shrub or small tree and grows in abundance on the shore line of salt water in many areas. It blooms in June and July.

Florida is a long state and the plants in the northern part are quite different from those in the south. Along the marshy river banks in northern Florida grow the Tupelo trees which bloom in March and April and from which the famous tupelo honey is produced. Due to high water the bees are placed on raised platforms. Production is highly specialized and not many are engaged in it. Some beekeepers move to gallberry, a shrub of three to six feet. It blooms after oranges and is abundant in some sections of the state.

In September the Coggshalls move back to their winter locations in the citrus groves. There is a little nectar and pollen coming in from various wild flowers almost all the time. Requeening is done in September and October. New colonies for increase or replacement are made with three or four frame nuclei and a new queen.

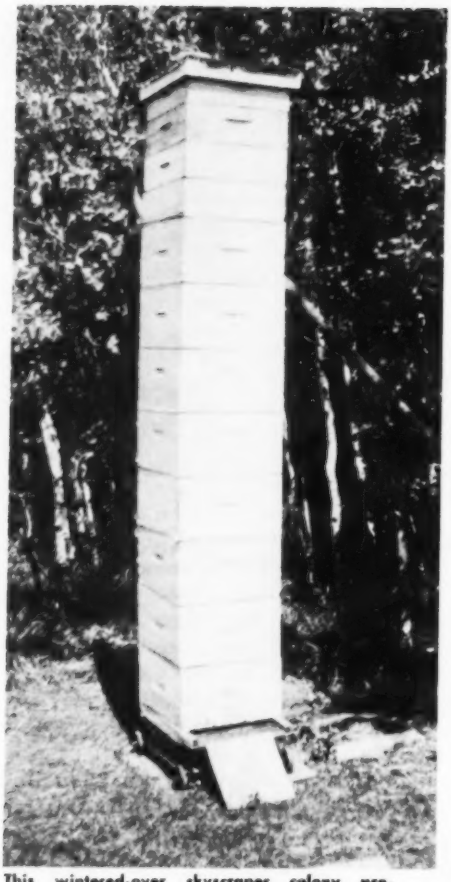
Winter Visitors Like Orange Honey

Orange honey is very popular with winter visitors from the north, so the Coggshalls built their honey house with a sales room on busy highway No. 27 in Minneola, which is just west of Orlando. For a time they sold honey there but then tourist roadside stands were built along the highway and they found it best to supply the stands with fancy containers of various sizes.

The Coggshalls have always been active in beekeepers' organizations. Mrs. Millard Coggshall has been Vice President and President of the American Beekeepers' Federation Auxiliary, and is Treasurer of the Central Florida Beekeepers' Association. Millard has been President of the Central Florida Association and of the Florida State Beekeepers' Association. He is the Florida director of the American Beekeepers' Federation and is Vice Chairman of the Honey Industry Council. He was program chairman for the Federation's annual meeting in Tampa last January. His father was a President of the New York State Beekeepers' Association and the Finger Lakes Honey Producers' Co-op.

As we reflect on the success of the Coggshall family we must conclude that anyone having the ability required to make a success of any business in this highly competitive world of ours, will find commercial beekeeping a good business and a good way of life—but you've got to like it!

FLETCHER THE 4-H'R
© JOE E. BURESCH
"VERY FUNNY, TELLING MY POP I WAS OVER BY THE BEES SMOKING...WHEN I WAS ACTUALLY USING THE SMOKER!"



This wintered-over skyscraper colony produced 525 pounds of surplus honey in 1957.

NOW HAVE you the answer? Give up? Why, it's annual rape, of course. After all these glowing claims you will say, "I'm from Missouri. . . . Prove it". Okay, I'm glad you asked me.

There are three varieties of annual rape; Argentine, Swedish and Polish. The Polish variety is about two weeks earlier than the other varieties. Rape should be seeded shallow, shortly after May 15 and it will begin to flower in 45 - 50 days. The flowering period for the Argentine variety is from four to five weeks and three weeks for the Polish variety (longer in favorable moisture conditions). The flowering period can be lengthened till September by later sowings. Of course, if your neighbor sows rape, so much the better. All you need to do then is to wait for the nectar to roll in. Rape is as hardy as turnips or radishes, with the Polish variety being the hardiest.

I have had honey yields from rape since 1944. Rape is a heavy yielder of nectar, my scale hive has registered a gain as high as 33 pounds in a single day and the fields of rape were two to three miles away. It secretes nectar whether the temperature is 50 or 100°, under wet or dry conditions, unlike sweet clover which is quite fickle at times. If the weather is too cold too hot, or too wet, clover may take one

STANLEY PALMER
North Battleford, Sask., Can.
From Saskatchewan "Bee Lines"

A Nectar Source *Par Excellence*

Name the honey plant which is easiest to grow, has the longest flowering period, is the heaviest yielder of nectar, secretes nectar at 50 or 100° (under dry or wet soil conditions), gives colony yields of 500-600 pounds for wintered hives and 300-350 pounds for packages, produces the best No. 1 honey and prompts customers to remark, "the loveliest white honey I've seen", "so easy to spread", "can't buy anything as good in the stores". (See above.)

to three days before it secretes nectar again. Even a heavy shower may upset nectar secretion in sweet clover.

On July 25, 1957, with a high temperature of 97° my scale hive gained 25 pounds. In 1947 I had the scale hive gain 23 pounds as late as September 3 and in the same year saw the bees bringing in pollen on November 3 after a low of +19° the night before.

Since 1955 I have had hybrid bees which I consider the best bees I've ever had and I have tested more than a dozen different strains from the three races. In 1955 the package with the hybrid queen produced 350 pounds. In 1956 an overwintered colony gave 620 pounds. A wintered colony on scales in 1957 produced 525 pounds of extracted honey and in 1958, which was a poor year, 435 pounds. My package colonies in this period averaged 275 to 350 pounds.

I believe rape nectar's sugar content is quite high as in '58 the bees brought in a total of 586 pounds of nectar to produce 435 pounds extracted honey and in 1957, 735 pounds nectar to produce 525 pounds of honey, and of course the bees had to live and feed their brood out of that amount of nectar. Rape honey is light amber when liquid, but white as snow when granulated, very little flavor, and of the consistency of butter.

You will likely be saying, "Well, that all sounds pretty good but there must be a catch in it somewhere". Yes there is one. Rape honey granulates quite rapidly. However, if one is aware of it, there is no problem (it may cause the commercial beekeeper more work). Rape honey will granulate in the combs in about six weeks after gathering so if the bees start working the rape by July 1, the honey should be extracted by first week of August. Honey gathered later can be extracted later. Don't extract before the honey is two-thirds capped, of course. I always top super when adding boxes. If honey is left on the hive much longer than six weeks, you will be in the granulated comb honey business and I'm sure you will not win friends or influence people, especially when they bite into all those wires. One last caution, after extracting fill your cans from the honey tank within five or six days, unless you want to sell honey by the chunk. The commercial beekeeper must work in high gear if his bees are gathering rape honey.

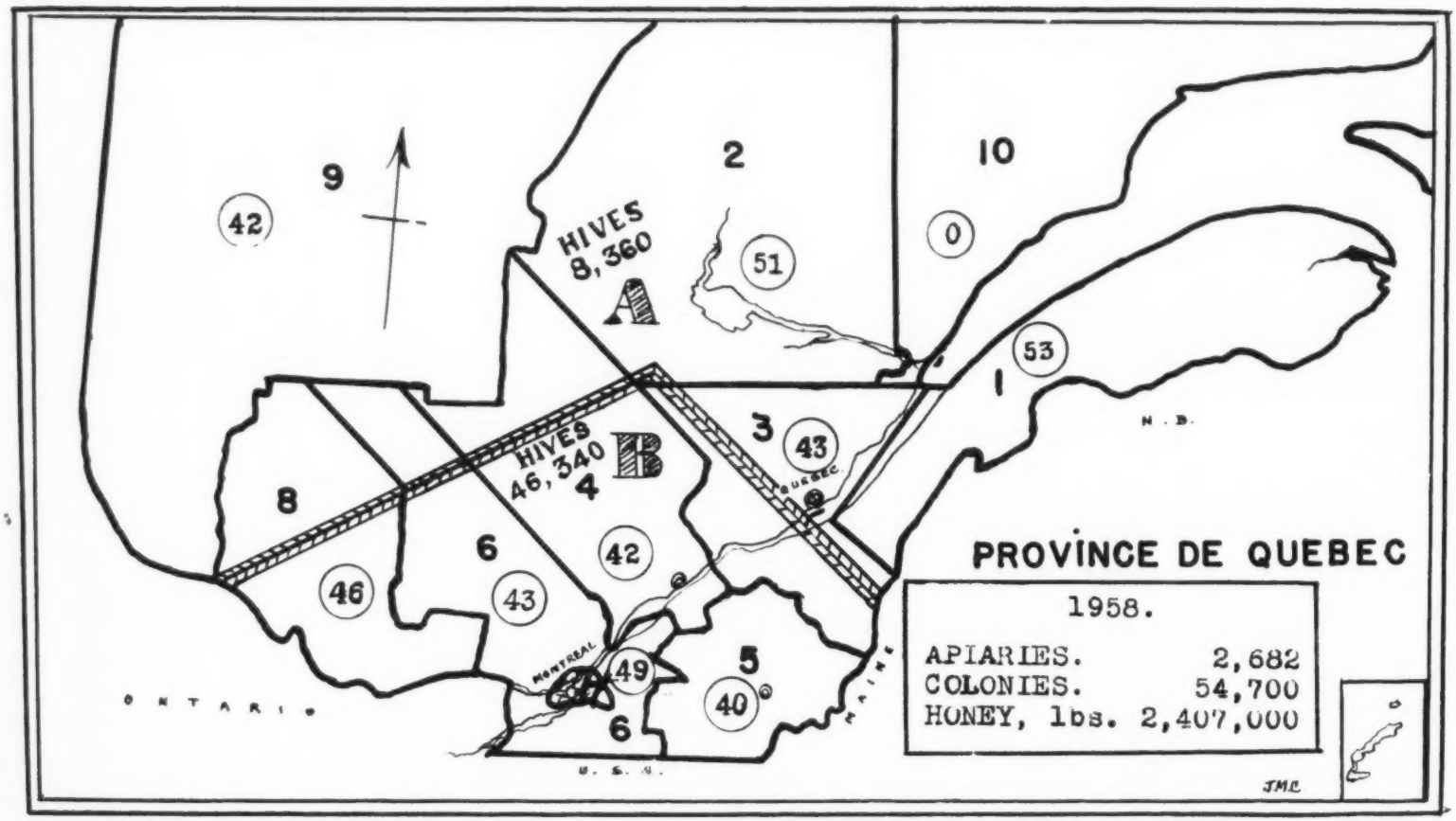
Bees winter very well on rape honey. In 1958-59 I successfully wintered bees outside which were confined without a flyout for 112 consecutive days. In 1955-56 the bees were confined for 142 days. On both occasions there was no loss or weak hives.

And last but not least, your customers will heap praise and compliments on the excellent honey you have produced. Of course, you need not tell them that the credit should go to the bees who make the best honey in the west, from the finest honey plant, annual rape.

It's An Idea

MILTON H. STRICKER
Stockton, N. J.

WANT AN advertising weathervane on your garage or breezeway? E. W. Sutvan of Laurel Springs, N. J. uses this small hive with a weathervane on top. It advertises your business or hobby and is so easy to make.



BEE INDUSTRY IN QUEBEC

In this and co drug ar charge

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BEEKEEPING IN QUEBEC

In this province of Canada the prevention and control of foulbrood by the use of sulfa drug and terramycin is performed free of charge by the Division of Apiculture.

J. M. COUTURE
Quebec, Canada

IT HAS BEEN positively established that Brown or Black bees, most likely introduced by Spaniards in America, were producing honey in the French colony at the earliest period of the settlement. The activity of beekeeping was then very irregular for quite some time, but maintained by the courage and hard work of men who had faith in bees and what they could realize from them. Thereafter, beekeeping was continued successfully up to the present time. The bees that had come from Central Europe, where the climate was mild and decent, were soon adapted to our cold winters and they apparently survived easily the numerous other difficulties of the new world.

The figures given in the first census of Canada 1890, indicate that the beekeeping industry was a very important part of the agricultural economy in Quebec with more than 41,000 hives, each producing an average of 15 pounds of honey that year. Apiculture was organized and maintained in Lower Canada with the same enthusiasm and vigor existing in all other parts of America at that time, in spite of the necessity to adapt available equipment and practice imposed by climatic factors, which were then and are still, extremely difficult during fall and winter.

In the early years of the introduction of modern equipment, specialized methods were adapted for the production of extracted honey and many commercial centers were organized where general farming conditions and market possibilities were most favorable. Bees were sold and distributed without restriction or control and there was great anxiety among the population to obtain one or more swarms of bees and produce honey. The result of this excitement was well apparent during the decade preceding the year 1900, showing an increase of more than 12,000 hives producing about 30 per cent more honey which was sold at a much better price.

Trouble for All

About 10 years later, an unfortunate event was the principal cause of a very important change in beekeeping management. This occurred shortly after the discovery of foulbrood in 1911. More than 35 per cent of the colonies were lost in a very short time, (1) and during the same period, heavy losses were also experienced by the poisoning of bees from the newly applied apple-tree spraying program. Beekeepers, alarmed and confused by this terrible calamity, decided to do something about it and organized an association

to protect their interests. Many societies were started so well that at the present time we have two beekeepers' associations strong and healthy, one of which is 50 years old.

The first bee law in Quebec was granted by the legislature in 1908 concerning the protection of bees against foulbrood, but the law could not immunize the bees or stop the introduction of the disease and the damage resulting. A second law was passed in 1910 to protect bees from the spraying of apple trees. These two laws were completed in 1912 by "The Act Respecting Bees". It is fortunate that legislation adopted in this early period is still in effect. With some modifications, much good has been done to the bee industry as we shall see later.

The beekeepers' demand for assistance was acknowledged generously by the Department of Agriculture, with the nomination of the first provincial apiculturist for Quebec in 1918. (2) His responsibility was to, "Organize the Beekeeping Division for the protection of beekeepers' interest, to inform them of the best methods of management, to promote general beekeeping and encourage experimental research work". (1)

The importance of the honey industry was definitely recognized as the result of a serious inquiry regarding the general conditions of beekeeping which outlined the possibilities of expansion and paved the way toward a more stabilized situation. The economic zoning of the province in 10 districts was determined, and compulsory inspection was enforced to locate and control, by all means, the contamination of disease.

Brown Bees Replaced by Italians

The brown bees, German or Dutch, that had survived almost 300 years against incidents and accidents of all sorts, had to be replaced by Italians to control European foulbrood. For many years colonies by the thousands had to be killed, and complete hives were burned on sight when American foulbrood was found by inspectors. Again Government assistance was realized under the authority of the "Bee Act," in 1925, "Relative to the treatment of contagious disease of bees, an idemnity is paid to the beekeepers by the Department of Agriculture, for the destruction of hives, bees or beekeeping equipment if infected by American foulbrood, if destruction is carried out under the inspector's supervision within a limited period of time". Amended in 1941 as follows. "These conditions also apply to the disinfection and other measures prescribed to control American foulbrood, when the work is performed by the inspector in charge of the special apparatus used for sterilizing beekeeping equipment and rendering beeswax contaminated with AFB."

The first experimental disinfection was done in 1931 and movable equipment was designed to be maintained and operated without charge by the Division of Apiculture. After the organization of this service, two trucks were in operation for many years on this project. Considerable saving was realized by the sterilization of hives and other equipment. Wax previously burned, was turned into cash for beekeepers after it was salvaged in salable condition. Since that time the situation regarding AFB has greatly improved.

Inspectors Use Drugs to Control AFB

The application of chemotherapy to prevent and control foulbrood is also done without charge under specific regulations for the distribution of sulfa drug by the inspector when necessary. Since 1955 there is no charge for the application of treatment by terramycin when it is done with the special equipment provided by the Division of Apiculture and used exclusively by the district inspector. This work is to be continued, as the results of three years are satisfactory.

Statistics

The total area of the Province comprises 594,860 square miles or 380 million acres. The arable land is only 35 million acres, and about 19 million acres are now occupied. (3) The importance of the beekeeping industry is best outlined in the map by dividing the Province in two sections of the economic zones numbered one to ten, where each circle indicates the average honey production per hive in 1958. The number of hives is mentioned for section A and B. It will be noted that maximum production is obtained within a short distance from the largest cities and the number of beekeepers

A nicely kept apiary owned by F. J. Sylvestre, St. Barthelemi, Quebec.

follows the trend of the population in every district. This economic zoning of the Province was divided in ten parts based on geographic conditions and agricultural production value to obtain a better efficiency in the execution of the different activities in relation to beekeeping, such as statistics, promotion, inspection, disease control and general public relations. Each district has a permanent specialist called instructor, with one or more inspectors as required during the inspection season. One of the most efficient activities of the bee division is the preparation of statistics; every year the list of all beekeepers is verified and revised with the information noted on the inspection reports.

Races of Bees

The replacement of Brown German bees, known as "Black bees" by the yellow Italians was general about 30 years ago to control European foulbrood, in every district except in No. 2 where the Black stock remained as masters of the land. Because no disease had been found so far north there was no need to replace them. They were doing very well and the beekeepers concerned had some doubts about the ability of the new race (Italians) to survive the extremely severe and long winter of their district. At present, the German bees are still to be found occasionally, but pure strain is limited to remote or isolated areas. Other races and hybrids have been introduced in different parts by migration of beekeepers from the southern districts taking advantage of a later flow. Imported packages from southern United States also were the cause of incoming new blood.

At the present time the race situation in the Province of Quebec is very difficult to describe. What was a one race monopoly with German bees became a two race problem between German and Italian. This was not bad, each race was isolated enough to avoid inbreeding and maintain their own identity, but later the introduction of Caucasians, Carniolans, Italians of different strains found their way through Quebec up to the north together with so many hybrids that the whole situation can only be described at this time as "Guess What?". Or shall we pity the poor inspectors of tomorrow for they are likely to be on the path of danger with what a blue-moon is bound to produce?

Queen Breeding

The number of our local queen breeders has dropped to very few in the past years. Only one commercial breeder received the official permit to sell

queens by the authority of the Apiculture Division. (4) Many other beekeepers are raising queens for themselves or for sale but no one produces enough to justify the necessity of issuing a permit. The Italians offered for sale are a special selected stock having a very high degree of adaptability to our climate, great productive value with low swarming quality. The actual production of about 5000 queens is sold every year but the number could easily be increased if the highly desirable qualities of this strain were better known.

Equipment, Wintering, and Packages

All beekeepers are using modern standard equipment of different kinds, available locally from Canada's largest beekeeping supply house, manufacturer and exporter of high grade bee material for more than 50 years. (5)

Bees are normally worked six or seven months and kept in winter quarters five or six months. The majority of beekeepers are using cellars to winter their bees with good results in single brood chambers. A large quantity of colonies are also wintered outside with single or double brood chambers, either in double-walled hives, or with the paper packing method. Wintering cases are also used with proper insulation.

Wintering in every district of the Province is always possible, but very special attention must be given to the preparation of the colonies. Fall feeding is of major importance and must be completed before the temperature is too cold in October. Bees left outside are best located in places offering natural protection, otherwise artificial windbreaks have to be provided, because the winter breeze is always dangerous during the extra cold period.

There is no evidence that winter temperature can be cold enough in any part of the Province to interfere with the successful wintering if standard colonies having the necessary provisions are allowed sufficient protection. But the most careful attention does not always give perfect wintering, and all beekeepers know that a certain number of colonies will be found dead in the spring. Winter losses of five to 20 per cent are partially replaced by packages imported from United States. Packages are also imported by new beekeepers and by those wishing to increase or help weak colonies in the spring and before the honey flow.

Very few beekeepers in Quebec have adopted the practice of killing their bees in the fall to replace them with packages the next spring. The long time average honey production per hive at less than 51 pounds per year is a serious economic factor to discourage those beekeepers inclined to favor the fall killing of their bees. The actual market price for honey compared with the cost of packages does not justify the adoption of this method.

Plants and Honey

The description and value of more than 200 plants have been identified as having minor or major beekeeping importance in Quebec. (6) One part of the province extending from Quebec to the extreme north and eastern limit comprising section A of the map, only produces surplus from plants (exclusive of Melilotus species) having water white to white honey of outstanding quality, equal in flavor and aroma to the best produced by bees anywhere in the world regardless of conditions. There is also some nectar collected from plants giving amber honey, but the surplus is never sufficient to influence the color of the total crop. In this first section of the province, there is only one short and heavy honey flow from late June to the middle of August. The most interesting plants contributing are: Clovers, **T. repens, T. hybridum.** Vetches, **Vicia**. Fireweed, **Epilobium**. Agastache, **Foeniculum**. Beach Pea, **Lathyrus**. Raspberry, **Rubus**. Blueberry, **Vaccinium**, etc.

In the other part of the province, section B on the map, Eastern Townships, Montreal and Ottawa valley, a much better crop is usually obtained due to the possibility of gain from three honey flows. One of amber honey mostly from dandelion, **Taraxacum,** which is plentiful in late May and June, and the main honey flow active in the middle of June to the end of July, also brings a very high quality of honey from the same plants mentioned in section A plus many others, Sweet clover, **Melilotus**. Basswood, **Tilia**. Acacia, **Robinia**. Alfalfa, **Medicago**. Ladino, **Repens latum**, and many more. Some years there is also a third flow in August and September of great importance especially in section B, from;

Goldenrod, **Solidago.** Asters, **Centaurea**. Thistle, **Circium**. Knapweed, **Centaurea p. verbena,** and Buckwheat, **Fagopirum,** etc. In this section B, it is possible to extract pure buckwheat honey in large quantities but a blend is generally obtained with 50 per cent of honey from other fall-blooming plants.

Beekeepers' Income

The beekeepers' revenue is mainly from the sales of honey and wax. A great proportion of the crop is retailed directly to the consumers as natural honey and some is sold to processors at wholesale price. Many commercial beekeepers have good facilities to process their honey in the different forms required by wholesale and retail stores, as extracted liquid or creamed, properly graded, packed, and labeled.

Some producers are offering cut combs with extra fancy packing in individual portions of about one ounce more or less. The demand for this particular product, as well as for regular sections, is by far exceeding the production while local extracted honey can only supply a part of the demand. The rental of bees for the pollination of apple orchards and other special crops is available by many beekeepers.

The production of royal jelly has been a favorable addition of a few specialists for their contribution to a limited local market. During the past year the sales of cosmetics and pharmaceutical products containing royal jelly have declined rapidly from the restrictions imposed by the Food and Drug administration, on the advertising literature claiming unjustified properties and therapeutic uses for those products. Beekeepers interested in this production have suffered seriously from a dangerous price reduction and many discouraged by the actual market conditions, will reduce or stop production next season, while others are making plans for an increased output with the hope of obtaining a reasonable profit from better publicity.

Experiments on the sales and production of pollen and bee venom, are progressing with some success by a few beekeepers interested in the possible use of these products. Results are satisfactory, considering the limited amount of sales realized after the first introduction of these new products to the trade.

While there are many problems still to be solved for better beekeeping in Quebec, we must be thankful to the chiefs of staff who have directed the activities of the bee industry during the past 40 years. At the beginning, Dr. C. Vaillancourt, now Honorable Senator, was the first Provincial Apiculturist, then under the direction of J. H. Lavoie. The second Apiculturist was H. J. Plourde, actually in charge of beekeeping course, and the actual chief of the division, Jules R. Methot. For their devotion to the bees and their faithful and efficient guidance, beekeepers recognizing the merit of their achievement offer to each, sincere gratitude and appreciation.

References:
1. L'Abeille, 1919; 2. Hon. C. Vaillancourt; 3. Quebec Bureau of Statistics; 4. Mr. R. Caron, St. Isidore, Laprairie; 5. F. W. Jones & Son, Bedford, Quebec; 6. Mr. J. N. Chabot, Dept. of Agriculture, Quebec.

"TWO QUEEN SYSTEM MAY BE ALRIGHT WITH BEES — BUT LEAVE IT RIGHT THERE !"

A part of the 50 colony bee yard damaged by the bear, also part of the 30 foot ladder from the top of which the bear was shot.

Beekeeper Kills Bear

Old Bruin's sweet tooth leads him to sudden doom

M. J. DEYELL

ELMER SKUCE a commercial beekeeper and farmer living near Omemee, Ontario, had an interesting and thrilling experience this last spring during early May. Elmer is one of my brothers-in-law whom I visited recently so I can vouch for the authenticity of the following bear story.

One evening about 5 o'clock, Elmer dropped into one of his bee yards about a mile from his home to see how his bees were getting on. A sad sight met his eyes. Some winter packing cases were removed, the hives broken open with combs of honey and brood scattered right and left, the damage being estimated at around $200. This apparently was the work of a bear that would likely return to the bee yard that night.

Something had to be done quickly, while it was still daylight, in preparation for capturing the bear that night after darkness came. Elmer, having been a hunter and an observer of wild life for many years, knew exactly what to do.

With the help of his son he fastened a 30-foot ladder to a tall evergreen tree that stood beside the bee yard. Armed with his trusty double barreled 12-gauge shotgun loaded with buckshot (SSG), he mounted the ladder and sat perched on the top round of the ladder with gun in hand, waiting for any eventuality.

His vigil lasted about an hour after which he heard the crackling of branches in the nearby woods as the big bear made its way from its den in the swamp where it had hidden during the day. Elmer was afraid he wouldn't be able to see the bear as he entered the bee yard. When the animal finally emerged from the woods and entered the bee yard, a few tense moments followed. The outline or form of the bear could be seen dimly. As Elmer shifted his position slightly to get a better bead on the culprit, the bear heard him and stood perfectly still a few seconds to listen. It was then Elmer let him have one barrel. The bear dropped immediately but was then given the second barrel, just for good measure. When the bear was examined it was found that the animal's neck had been broken by the first shot.

This was the first time since 1870 that a bear has been shot in that vicinity. A few years ago, my brother Huber Burke of Omemee, a commercial beekeeper, had a yard of bees in the vicinity of Bobcaygeon about 25 miles north of Omemee that was molested by a bear. Some attempts were made to shoot the bear, but to no avail. The hunters armed with a rifle and a strong flash light waited in ambush beside the bee yard. After a long vigil the bear appeared. On seeing the flash light, he dashed into the woods before the hunter could get a shot at him. It was necessary, a little later on, to move the yard of bees to a location further south.

Bears do pose a rather serious problem for beekeepers in certain areas of Canada and the United States. Electric fences around bee yards have been tried, but are not too successful. Bear traps have also been in use. Perhaps the good old 12--gauge shotgun loaded with buckshot is the best solution to the problem, that is, if the hunter with his gun can time the procedure so that he can manage to be in the bee yard at the time "Mr. Bruin" makes his visit.

I am of the opinion that Elmer Skuce hit on something very important in the matter of getting close to bears in bee yards. He stationed himself 30 feet above the bear, in a higher strata of air where the bear was not able to detect his presence. So perhaps Elmer has come up with an idea that will be of value to other beekeepers living in areas where bears are a problem.

Elmer standing guard over the bear—in case he should come to life again.

Old Bruin stretched out on the ground, "dead as a doornail".

Our Cover Photo

WE ARE NOT SURE about when the observation hive was first used. We do know, however, that during recent years it has served a useful purpose, especially the one-frame observation hive which permits a close-up study of bee behavior. This German youth is apparently intrigued with the inmates of the hive.—Photo by Harold Doering, Kirchseeon, Ger.

How I Sell Honey

ARTHUR WHITE
Jackson, Michigan

Some say they can't sell the big chain stores. This author has had some success.

I AM NOT the largest packer of honey nor am I the smallest. My annual crop usually runs between four and five tons. With the exception of one year when I sold about 3,000 pounds wholesale, I bottle and sell to the retail stores. I bottle 8-ounce, 1-pound, and 4-pound jars. In our town of approximately 75,000 population we have small independents, independent supermarkets and chain super-markets. I sell them all.

As to the service I give them, I call on them once a month, year around, with the exception of the large supers which I service once a week. It takes me about two hours to service the large stores once a week and the others about a half-day once a month.

Some say they can't sell the big chains. True, some won't buy locally. In our town we have five different large chains. Three will not buy locally, but the other two will, provided your price is the same or lower than their buyers can buy for their warehouses. Remember, the big chains are always looking for prices or leaders.

I recently bottled and sold 1,500 pounds in 4-pound jars. I approached the buyers with this deal: 50¢ off a case in 10 case lots. I averaged 16¢ a pound for it, perhaps not enough for honey, but better than a 10¢ wholesale market, which exists at the present time around here.

Now this part may go against our national honey week, but I discovered that I didn't have good success trying to unload a lot of honey in October. Their excuses were "Weather too warm; Wait till some cold weather sets in; pancake weather," etc. So now I wait until the first of the year. I get them lined up in December and deliver it the first of the year. I find that honey moves better in the cold months, (in this town anyway).

I haven't any elaborate bottling works, but I believe I pack a strained honey that is as clear as the big packers' bottle.

Heating Honey Twice

When I extract I store my honey in 60's. To liquefy it I use a low two-burner bottled gas stove. I do two cans at a time in a water bath. I use a low flame to liquefy it and I figure about four hours for two cans in cold weather. On this operation I only heat it enough to liquefy it. I usually do about 10 or 12 cans, or about what I think I will need for the month. Then, when I get ready to bottle I reheat the liquid honey to between 150 and 160 degrees. I find this will hold it for four to six months and very seldom do I have to change sugared honey in the stores.

Some may say, "why go to all of the bother to heat it twice"? I have found that by trying to liquefy and bottle in one operation you don't always get all of the honey in a liquid state. I have had honey that showed 140 degrees and still had a granulated piece floating around in the middle, but by letting the warm honey set, that hard to see piece will liquefy. And in bottling honey all you need is one little piece and you can pick up sugared honey from the stores for a long time. I know, I've had the experience. As for the amount of bottled gas I use, I average between three and four 60-pound tanks a year.

My bottling tank is made from an old style cream separator. It holds about 150 pounds of honey and has a strip of glass in front through which you can watch the honey while bottling. I removed the original faucet and put on a one-inch honey gate. The top I converted into a strainer by soldering on a piece of No. 80 copper mesh. There's no use in trying to strain warm honey through a No. 80 copper mesh. It has got to be hot and that is where I get my clear honey. That No. 80 mesh will really strain it.

I don't like to bottle it too hot as I find that the gate will stick, but by letting it set for an hour or so the gate works smoothly.

I usually bottle four cans a day in this manner. I find it takes about two or three hours to heat cold, liquid honey to 160 degrees.

In closing I might add that from my observation in retail stores in different sections of the country I find little extracted honey on the shelves from local beekeepers. Most of it on the shelves is from the large packers. I believe the local beekeepers can pack just as an attractive package as the others do.

Liquefying Honey

HENRY N. FONES
Memphis, Tenn.

MOST OF MY honey is sold in cans to bakers, re-using the cans until they are no longer suitable; thus the honey is stored in 55 gallon drums until needed.

This spring one drum granulated solid and a method of liquefying this honey was badly needed. Not having steam and not wishing to use a heater under the drum, I decided to try winding a soil heating cable around the drum. Two 400 watt, 40 foot lengths of cable were wound around the drum, spaced about two or three inches apart and fastened with masking tape. Around the drum was wrapped two eight foot lengths of rock wool insulation to hold in the low heat generated by the cables. About four hours later two five gallon cans of liquid honey were drained from the drum and one of the cables was removed from the electrical socket. The next morning the remainder of the honey was drawn from the drum completely liquefied.

Not having a thermometer to test the temperature of the honey, it was estimated to be not over 160 degrees F., as the honey was not too hot to taste, and the specified maximum temperature of the cable insulation was 160 degrees F. as stated by the manufacturer. These cables seem to answer a need of low temperature distributed over a large area, where a water jacket is not possible nor practical.

Left to right: John Heemskerk, Al Baptiste, Al Jones, Dr. Frank R. Shaw, and Charles J. Owen inspect the honey judging equipment used in the honey show.

Just keeping bees is easy. Producing high grade honey and wax is an art. In order to do this a beekeeper must first learn to recognize the quality product. This association educates it members by conducting a honey show.

A. J. JONES
Malden, Mass.

Extension Work Can be Fun

IN MASSACHUSETTS there has been considerable interest and competition in exhibits of beekeeping products at county and other fairs and exhibitions. This in turn has led to a desire for more information on how the quality of entries could be improved, and also to a desire for information as to the basis for judging honey and other beekeeping products. As an experiment, a committee of the Middlesex County Beekeepers' Association arranged with Dr. Frank R. Shaw, beekeeping specialist at the state university, for a honey show having a new approach — the members of the club to do the judging. The idea seemed to have real merit and was put into action at the November 29th meeting of the club. The committee and Dr. Shaw put consider-

able time and effort into preparations for the show and into preparing procedures for the judging. Although the event was a great success, many things were learned, and opportunity for improvement in such a show became apparent. For the benefit of other groups who may wish to try something similar, our experience is detailed herewith.

The judges consisted of more than a dozen interested members of the association. In this way, the members were initiated into an appreciation of honey and beeswax products both subjectively and objectively; that is as producers, and as consumers might be expected to react. The theory proved to be correct that competitors would learn more by doing the judging and becoming familiar at first hand with the criteria from which are formulated the conclusions of professional appraisers. To say that there was some confusion and some laughable incidents does not detract from the value of the affair, both to those participating and to those watching the proceedings. Even some wives present, who normally are prone to take a dim view of such goings-on, showed unexpected interest in unexpected aspects of the honey and wax show.

A simple set of rules drawn up and distributed in advance were as follows:

1. All entries from exhibitor's own apiary and current year production.
2. No labels of producers.
3. Comb honey in cellophane or window cartons.
4. Extracted honey in 16-oz. jars, preferably Queenline or similar.
5. Color class determined by committee at time of entry.
6. No more than one entry in each class from one family.
7. Open to members only.
8. Chunk honey in any glass container that suits the imagination.

The show got off to a good start by the submission of 34 entries spread over eight classes. The classes were as follows: section comb honey, cut comb honey, light extracted, amber extracted, dark extracted, chunk, wax product, and piece of wax one pound or more. As is usual in such affairs, each exhibitor was given a number and each of his exhibits was numbered with the class in which it was entered; i.e. Brown is exhibitor No. 5 and his section honey is in class No. 1—hence his section is labeled 5-1 upon arrival at the show. Only the secretary knows to whom 5-1 belongs, and does not announce it until the results are handed in. Tables had been prepared for the entries.

Another table had been prepared for pans of warm water, towels, sponges, and equipment. The University equipment was loaned for the occasion and caused as much interest as any other part of the show—more perhaps. It consisted of: Pfund Color Grader, USDA Honey Comparator, refractometer, hygrometer, polarized honey viewers, samples of bitter, wax contaminated, burned, off-flavor honeys. Up to this point, everything was very efficient. From here on however, proceedings have been subjected to a wide variety of constructive criticism, there being as many ideas on how next to proceed as there were people proceeding.

The Scoring Method Used Was a Point System

On extracted honey for example, degree of density (water content) counted 20%, freedom from crystals 10%, cleanliness and clarity 30%, clean and neat containers 10%, flavor 20%, color 10%. Two teams of two each were chosen to judge each aspect of each item. There were about six or eight teams, two for density, two for cleanliness, etc. The best density for instance was given 20, next best 19, and so on. As to the results achieved, it was the consensus that for beginners, it would be well to have one team only on each aspect of the product, as the criteria varied widely between the teams on the same point, with ludicrous and bizarre results. One team on one aspect, for instance, didn't understand the percentage system at all, and marked everything "good, fair, poor".

On the other hand if this had not happened, there would have been some who would have had incorrect ideas of grading. This, all in spite of careful instructions. Flavor might have caused a wide divergence, but strangely enough did not, as it was conceded at the beginning that anything "normal" would get a good score, and only bitter, burned, sour, or obviously off-flavored honey would be marked down. All agreed flavor was too hard to define to be guided by any other rule.

The greatest difference of opinion came over the relative weights to attach to each aspect. One excellent honey came off third because it was 17.5% moisture and there were four others with between 17. and 17.4% which had the effect of placing the 17.5 honey in fifth place as to density with loss of five points on total score. A great argument ensued as to the number of points to subtract on the heavily weighted items such as cleanliness, for each successively poorer entry. The committee having spent some time on all this beforehand and having prepared score sheets accordingly, the discussion seemed academic, but probably was productive of great thought by all concerned.

Another Moot Question Was the Matter of Color

The committee had proceeded on the theory that the jars would all be lined up in order of lightness or darkness, and then three arbitrary divisions would be made for competitive reasons into light, amber, and dark classes. The committee felt that within these broad classes, no judging purely on color should be made, as it was unfair to a fellow who lived where he could not produce water white honey to lose points just because his honey happened to be a shade or two darker.

There was also a school of thought that held that color is over-emphasized in evaluating honey anyway, and that color has no effect on goodness of product. However, the color boys won in this instance.

On another occasion, it was felt a compromise might well be worked out —have more color classes, but not enough to remove all competition. Incidentally the proportion of entries was about five in light, ten in amber, and three in dark. This is about the same proportion divided in three classes that has been observed in local fairs at other times. It would seem that a division into classes of light, light amber, dark amber, and dark would provide more even distribution.

The question of whether to take a given moisture content as optimum and deduct for divergence above or **below,** did not come up. Neither did the question of eliminating high readings or very low readings, for the reason that no one had a particularly high or low content. In short, no subterfuges were resorted to in order to win a ribbon—everyone was a competitor of integrity and submitted run of the mill honey in an effort to learn where he was falling down in his honey processing. A real interest was shown by those who wanted to learn more about improving the quality of their honey.

One of the most unexpected results of the show was the reaction of the wives present. Their interest centered about a two pound piece of beeswax moulded in a cake pan that was a rich lemon yellow, very smooth, and without a crack. Many of the ladies wanted explicit instruction on how the wax was refined, how poured, how cooled, and above all, how it was kept free of cracks. Only slightly less interesting to the fairer sex was an old foundation mill and a piece or two of foundation made from it, entered in the wax class.

An odd result of entrants doing the judging was that in spite of the numbers instead of names on the entries, many judges recognized their own and friends' honey, and leaned over backward in being critical. It seems to be an axiom of honey shows that when the show begins, friendship ceases. There was one other very excellent result from the standpoint of the specialist; for once there was no complaint about judging. One man was slightly grumpy about his honey being taken out of the amber class where he thought it belonged and put in a light class. But when this entry won first prize, he felt better, and no more was heard about the committee's high-handedness.

The one procedure conducive to most confusion was the concept of having different teams for the same aspect of the same product. As for instance, two teams on clarity. It was found that for beginners it is best to divide up the would-be judges into teams of four or five men and let them confer as a committee on density, and another single team on crystallization, etc. All in all, the greatest of competition prevailed, and more was probably learned in one evening than in many evenings of lectures. Learning by doing, the do-it-yourself idea is an excellent method of extension work, is fun, and is very informative.

HIVE TOOLS

S. E. BLAND
Ass't. Provincial Apiarist
Saskatchewan, Canada

I DON'T KNOW that beekeeping history records the name of the man who invented the hive tool. As shown in Fig. 1 it appears to have evolved through the years until we now have a fine multi-purpose tool not only for the beekeeper but for the handy man about the home. I noticed recently that one of the large American tool manufacturers is selling a tool for painters, electricians, and carpenters which they call their "Li'l Jimmie". They advertise that it can be used as a moulding remover, scraper, putty knife, nail puller, chisel, or hammer. The price is about $2.00. Only beekeepers will recognize this "Li'l Jimmie" as nothing more or less than a beekeeper's king-sized hive tool.

Did you ever lose a hive tool? If your answer is "no" I can only conclude that your are a beginner in beekeeping or one of those careful meticulous people who have a place for everything and everything in its place. Of course, many bee smokers have a device that is supposed to hold the hive tool when not in use. I do not know if many beekeepers make use of this hive tool holder on the smoker but from my personal observations I would say they do not.

My own answer to the problem of the disappearing hive tool is pictured in Fig. 2. Since hunters wear their skinning knife in a sheath at their belt and a telephone repair man attaches the tools of his trade to his belt, I have done likewise. My next design would not be entirely enclosed. The leather strip attached to the belt would have two leather or metal strips riveted to it into which the hive tool could be slipped.

I believe commercial beekeepers would find such a carrier very useful.

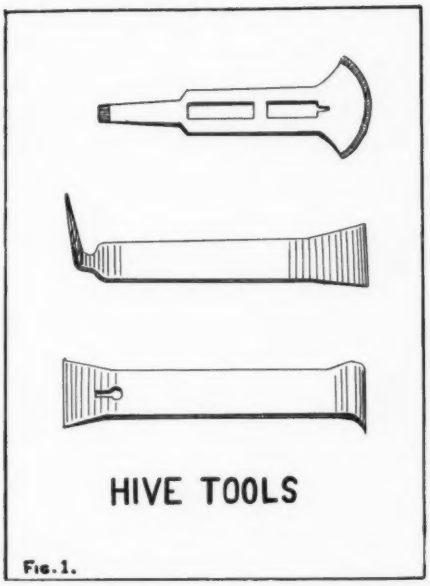
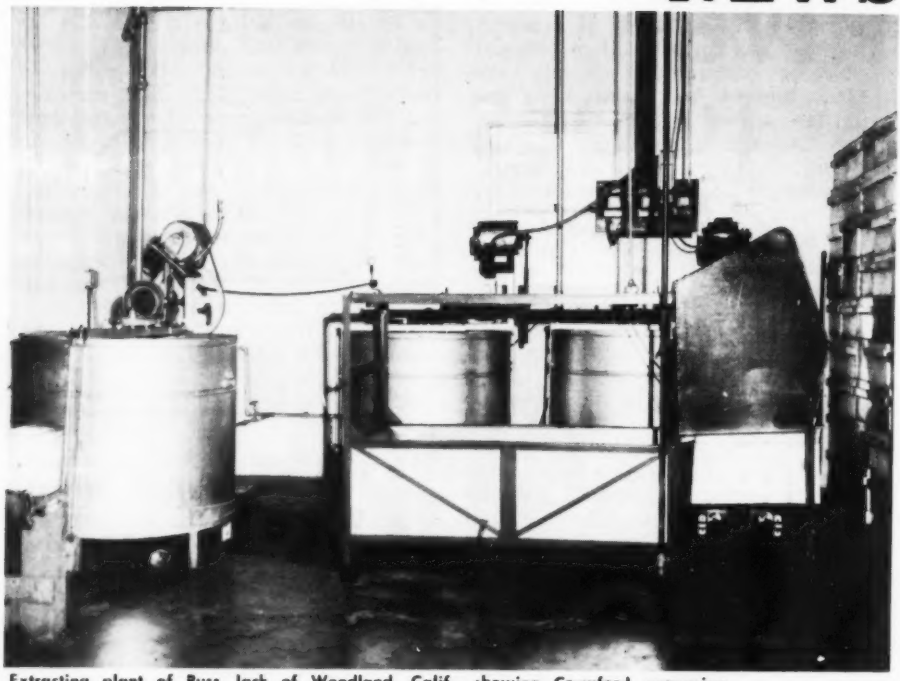


Fig. 1.

The hive tool is always at hand and with the curved end turned against the leather there is no danger of it cutting anything. This is not the case when the hive tool is carried in one's pocket with the ever present danger of cutting the seat of the car or the operator.

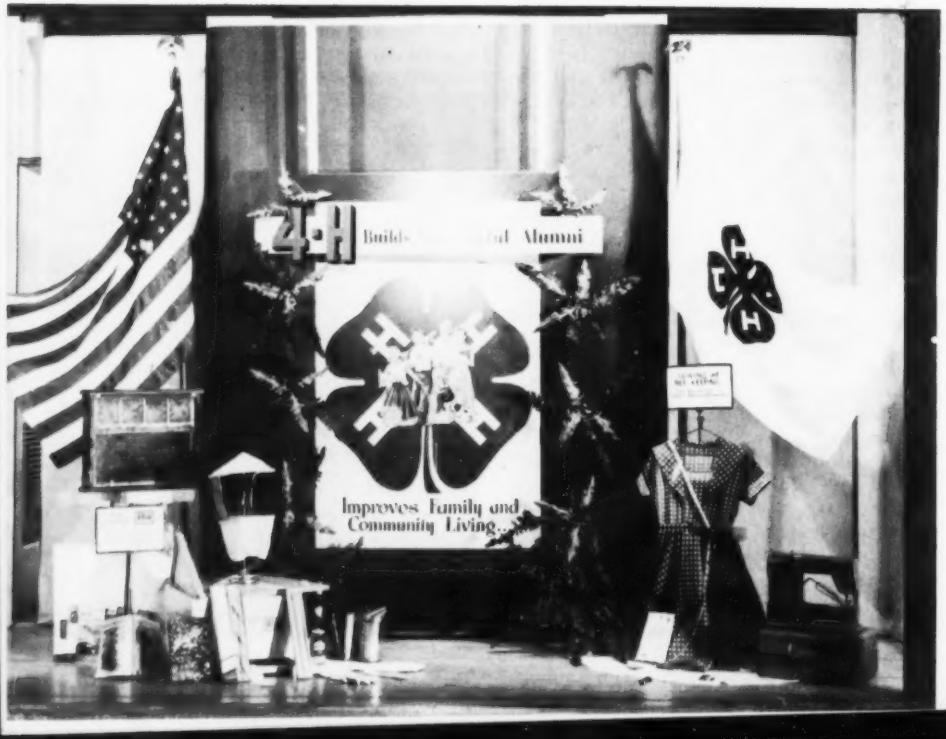
I would be interested in hearing what beekeepers think of this idea.

NEWS

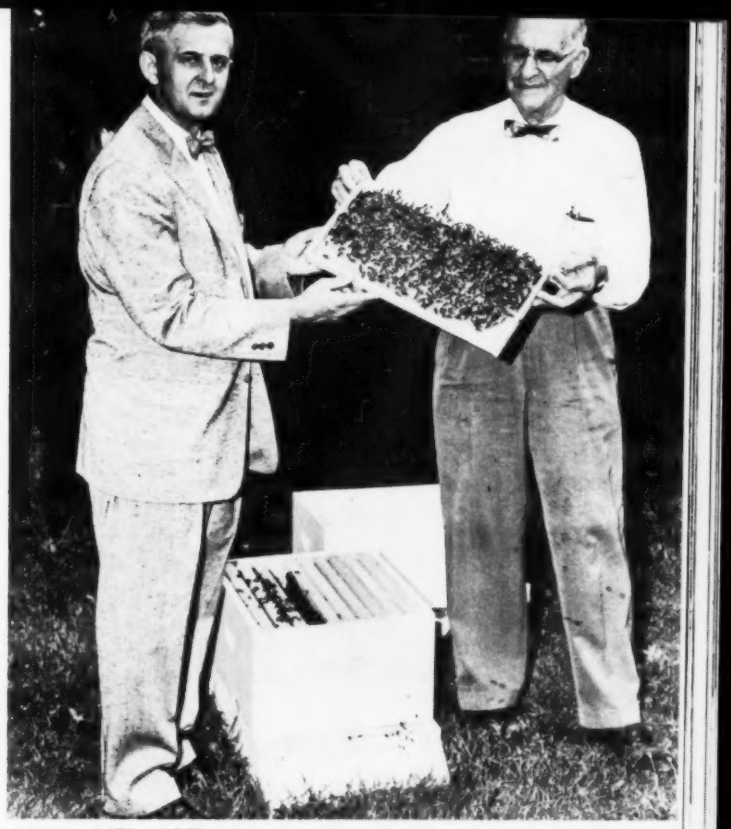


Extracting plant of Russ Jack of Woodland, Calif., showing Crawford uncapping machine, two extractors, and spin dryer. This turns out about 25 supers per hour.

An attractive 4-H display in a window of the Ohio Edison Co., Akron, Ohio. Beekeeping is one of the 4-H projects, hence the observation hive and beekeeping equipment shown.—Photo by J. W. Hoogerhyde.

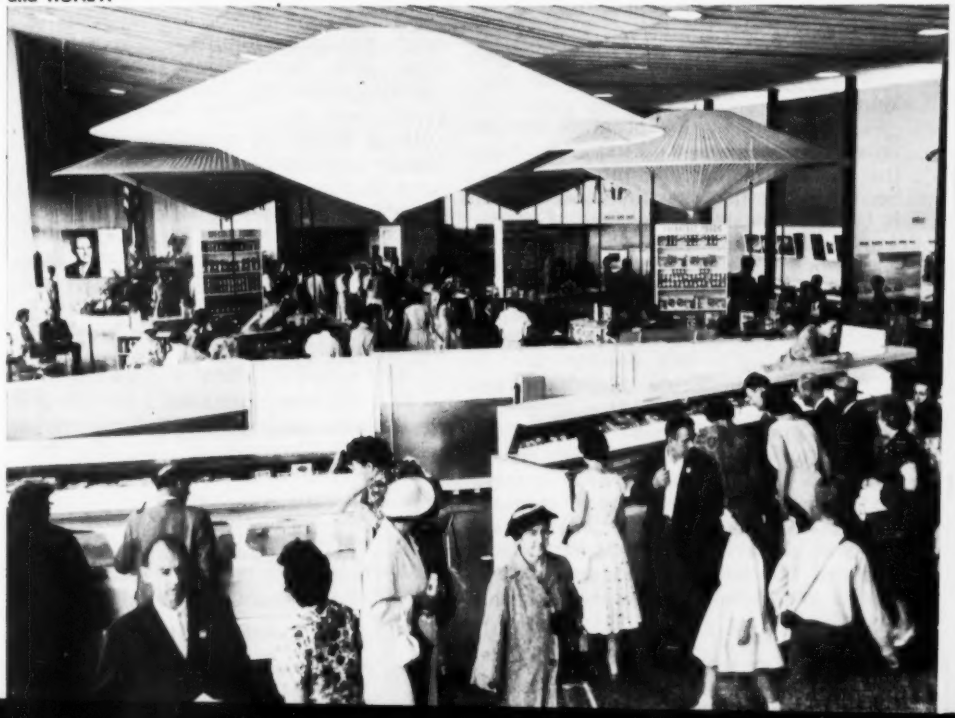


REEL



Joe Sedlak, left, vice president of the Cook DuPage Beekeepers' Association visited Medina on business and stopped in to talk with Jack Deyell, Editor of Gleanings. Here they are shown inspecting a newly established colony of Caucasian bees.

In this building, the Pavilion of Honor, was the American Exhibit, International Food Exposition, Lausanne, Switzerland, June 13-28, 1959. Sponsored cooperatively by the U.S. Department of Agriculture, and the U.S. food industry, the American Exhibit was part of a continuing program to expand foreign markets for U.S. agricultural products. On display were poultry, rice, wheat and soya products, fruit, and HONEY.



Research Review

DR. ROGER A. MORSE
Research Editor of Gleanings and Ass't. Prof. of Apiculture
Cornell University, Ithaca, N. Y.

A New Type of Biological Control Successful:

THE CAMPAIGN against the screw worm in the southeastern states is meeting with tremendous success. The screw worm is one of the most serious livestock pests in the southern states and in the southeast has caused over $20,000,000 loss annually. The larvae of this fly kill by invading tissue around a wound or cut and actually eat the animal alive.

Two factors in this program are of interest to beekeepers. First is the fact that this is a biological control program. Second is the fact that the screw worm is being eradicated. No cases of screw worm have been found since the last week in February in the southeast. Plans are now being made to extend the program to the southwest and to eventually eliminate this insect pest from earth.

The technique being used is an interesting one. The normal male screw worm mates 6 to 8 times, while the female mates only once. USDA researchers, with this knowledge, bred a male which mated 12 to 14 times. Both male and female flies are subjected to radiation thus making them sterile. These radiated flies are then released by airplanes and mate with the normal flies in the field. The normal female flies continue to lay eggs but the eggs never hatch. Since one radiated male can tie up 12 to 14 normal females, and make their eggs sterile, this program has a terrific advantage.

There is little doubt that success of this and other eradication programs will prompt greater use of similar techniques. The use of biological control would be a great boon to beekeepers.

Queen Recognition by Workers:

THE SIGHT, sound or smell of a queen has no effect on worker bees. If the workers can touch a queen with their antennae, howeve, there is perfect order within the hive. These facts have been known for nearly 100 years and have served as the basis for much research culminating in the recent, and fairly well substantiated, "queen substance" theory. A recent paper sheds more light on the subject.

In a series of experiments several objects were impregnated with the extract from a queen's body. A dead bee, a dead drone, a piece of filter paper, a piece of wood, and some cotton could all substitute for a queen. In one illustration in this paper a piece of wood impregnated with queen extract is surrounded with workers which are feeling the wood with their antennae just as they would a queen.

The question of how "queenrightness" is transferred in the colony is discussed. The author concludes that much is still to be determined about this subject.

Verheijen-Voogd, Christina
How worker bees perceive the presence of their queen. (In English). Zeitschrift fur Vergleichende Physiologie 41: 527-82. 1959.

(Continued on page 508)

FROM Foreign LANDS

Translated and Edited by ERIKA BARTH, San Antonio, Texas

Experiments with Plastic Foam Hives:

GROUP EXPERIMENTS between plastic foam hives and regular wooden hives were conducted at Ginseldorf experimental station by prominent E. Perkiewicz of Marburg, Germany.

The first group of six plastic hives, filled with strong colonies, competed against 10 other regular wooden hive groups during two summers and one winter before the first report on this experiment was issued. It reads as follows:

During the year of 1957, this experimental group produced 59 per cent, during the year 1958 only 55 per cent of the total average crop of the complete station. During both years the plastic foam hives placed last in the group experiments.

Die Biene

Excerpt of a letter written by Albert Schweitzer from Lambarene in the fall of 1925, now published in his book:

Glauben, Lieben, Handeln:

"IT WAS NEW to us that wild honey could also be poisonous. We hear of series of severe illnesses and sudden deaths from several saw mills. Mushrooms could not be the cause, because the victims had not eaten them, and yet it must be food poisoning, because usually the natives that go on searches in the forest become ill with it. One owner of a saw mill gives us a clue. He found that everyone that had come down with this mysterious disease had eaten wild honey. Inquiries into this showed that it concerned honey of a particularly small bee which nests in hollow tree trunks and preferably in the hives of a particular type of ant found there. The honey is damaging because it contains ant acid.

This can cause severe kidney infections. The honey is especially dangerous to the natives since they bolt it down in very large amounts, including the dirt of the ant nest which adheres to the honey.

Two of the ill that came to us from a sawmill can be saved because they did not receive their fair share when it came to dividing the honey. Their kidney infections will clear up.

Unfortunately, we have no time to look into this interesting matter any further. In this part of the country we are trying to get the natives to avoid this much darker than usual honey, but will we find someone that will listen?"

Suedwestdeutscher Imker, May 1959

Doull's Opinion on Nosema:

HERE IN AMERICA Nosema is always an interesting item for discussion. Some consider it a serious problem while others "spoof" it. Regardless of your opinion, the opinions of Australian scientist, K. M. Doull, will be of interest.

Mr. Doull feels that the final aim of Nosema research should **not** be a chemical control but a method of helping the bees keep their "end up" against the parasite. This means that the beekeeper should keep his bees healthy and thriving. This enables the natural

(Continued on page 508)

Editorials

Four and One-half Million Dollars

WITH THE NEW CROP HONEY on the market in some states and on the hives in others, the question in many minds is, "Will the beekeeper receive an adequate return for the honey he produces?"

Robert H. Rusher of Massachusetts, in his article in the May issue of Gleanings, "Beekeepers, Arise", brings to the fore some important thoughts that we should not forget. Mr. Rusher points out that the economic forces have rifled the producers' bank accounts to the tune of four and one-half million dollars this past year. These figures are based on the January issue of "Agricultural Prices" published by the Agricultural Marketing Service which shows a reduction of almost 1½¢ a pound in the price of honey paid this year as compared with last. This multiplied by the 265,000,000 pounds of honey produced in 1958 comes up with three and three-quarter millions of dollars loss. He points out also the value of materials purchased by the beekeeper, prices paid for interest, taxes and wages that have arisen 2.48%. With this in consideration the total loss to beekeepers is around four and one-half million dollars.

Mr. Rusher states that if the industry had contributed a small percentage of this to the American Honey Institute, and the American Beekeeping Federation check-off plan, to have increased the publicity of honey, this probably would not have happened.

Both the check-off plan for the Federation and the American Honey Institute are not opposed to one another but can work together to publicize honey as it should be publicized.

Check to see what you can do. Write the American Honey Institute, Madison, Wisconsin, and Leslie Little, Secretary of the American Honey Council, Shelbyville, Tennessee.

More About the Drone

THE DRONE BEE is a rather peculiar creature. He does not have a father but he does have a grandfather on his mother's side. He is produced from an unfertile egg. The drone does perform one essential function, namely, he mates with a virgin queen and thus helps to insure the perpetuity of the race.

An interesting article entitled "The Behavior and Nutrition of Drones" by Z. Orosi Pal Godollo Meheszet, Hungary, appeared in the June, 1959 issue of the Bee World. We quote a few portions of this interesting article:

"Oertel, Emerson, and Wheeler (1953) found that drones without food starved within a day. Leventsa, (1956) stated that drones up to four days old are fed by the workers but from then on they also suck honey from open cells. Drones have their own odor, Buttel-Reepen, (1900) but we know little about it. Experiments show that queen odors are acquired not only by workers but also by drones.

"Many observations on the dances of worker bees have been made and reported, but the dance of the drone has not previously been described. Betts (1949) asked; 'Why do drones not dance nowadays?' I have observed the dance

of the drone on the top bar of a frame but only on one occasion. The drone moved as a worker does when she is foraging at a far distant feeding place. The loops were, however, larger, both together being about ten cm. across and there was no tail wagging. The drone flew off after the dance."

Some beekeepers seem to be terribly concerned over drone cells that are likely to occur in brood chambers of hives. We have found even though a swarm or package of bees is given frames with full sheets of worker foundation, that even during the first season, the bees will manage to build some drone cells in which the queen lays unfertile eggs, in order to rear some drones.

Some authorities have said that in due time approximately one-tenth of the comb surface in a normal colony of bees will consist of drone cells.

The late Mel Pritchard, for almost 40 years a queen breeder for The A. I. Root Company once said that if he were producing honey, he'd have one drone comb in each 10-frame colony of bees to provide comb space for the queen to lay unfertile eggs. While we have never given this idea a thorough trial we are of the opinion that this might prevent bees from building drone cells at the corners of combs, or changing portions of the mid-ribs of combs, from worker to drone cells.

Even though the drone does not have a father, he is an important and essential member of the honeybee family.

We Must Have More Young Beekeepers

AS WE GET ABOUT over the country attending beekeepers' meetings, we find a comparatively small percentage of young people present. The attendance consists mainly of middle aged and elderly people. We can, of course, understand, why young people or the children of beekeepers would not find the average beekeeping program of interest to them.

During recent years attempts have been made to have at least a part of a beekeepers' program geared down to the level of beginners and youth. This effort is being met with considerable success. Within the month we attended a meeting in Wellington, Ohio, where the 4-H Club young people handled the program.

The adults who appeared on this program made it a point to direct their remarks down to the level of young people, some of whom had just recently acquired a few hives of bees. It was encouraging to see quite a number of young beginner beekeepers up in the front rows eagerly taking in every word.

It is usually difficult for experienced beekeepers to have inexperienced beekeepers comprehend just what they are trying to say. A speaker may use terms that are unfamiliar to beginners. He should avoid using any $50.00 words, but if it seems necessary to use an occasional scientific term, it should be defined so that beginners know exactly what the speaker is talking about. Even a common term like "foundation" should be defined. Some people in the audience, especially beginners, may think that it is something to put under a hive to hold it up. The speaker should, of course, say "comb foundation".

Some years ago the writer listened to a talk on package bees. At the conclusion of the talk a young chap, who had been listening intently, asked the speaker to explain the difference between package bees and ordinary bees.

To interest young people in beekeeping, it has been brought out at recent meetings that comparatively few of the experienced beekeepers are willing to give of their time and talent to help young beekeepers. In some cases this may be understandable, but generally speaking the busiest beekeeper can surely find some time to help beginners. There may be a few commercial beekeepers who are so shortsighted as to think that encouraging young people to take up beekeeping will mean more competition and consequently hurt the business of the commercial beekeeper. Obviously, such thinking is erroneous. More young enthusiastic beekeepers in any community will help to publicize bees and honey and this should be a help rather than a hindrance to commercial beekeepers.

Our beekeeping industry does actually need more young beekeepers to take the places of older beekeepers who pass on, or find it necessary to give up beekeeping. Opportunities to help young people interested in bees, in 4-H, Scouts, or FFA, should be welcomed because some of the young people in our industry today will be the leaders of tomorrow.

Live and Learn

PROPOLIS PETE

LAST MONTH I ended this page wishing that I knew more about nectar secretion. This month I am starting with the same wish. Around here, at least, there just doesn't seem to be any connection between the amount of bloom and the amount of nectar brought in.

Here's what I mean. The season started off all right. As soon as the weather let up a bit, the bees started to bring in goodly amounts of pollen, and I presume nectar. When the maples bloomed the trees near the yard were worked so hard that each tree sounded as though a swarm were hiding in it some place. On the other hand, dandelions were very plentiful, but in a dozen patches that I investigated, I saw one lone bee sniffing around, and apparently not getting anything. But at this time they were piling in nectar and pollen, so they were working something. The pollen was yellow, and I presume it was dandelion. Maybe they found such a rich source that they did not bother with the little patches I looked at.

During fruit bloom, that is, up until the middle of the apple blossoms, they also did very well. Then came the episode I told you about last month, and zip went my field forces. The wild cherry that has the blossoms in clusters, overlaps the apple bloom at the beginning, and the locust at its ending, had a very heavy stand. Every tree was just a mass of the creamy white that is the color of its blossoms, and those blossoms were covered by every species of bug, known and unknown, and hybrids of the two, that lives in this neighborhood. But nary a bee did I see. Of course it could be that the depletion of the field force had something to do with that, but you would think that being so close, some bees would work them.

To get off the subject a bit, it is interesting that in spite of the insect covering on these trees, the pollination was almost zero. The stems of the blossoms have only one or sometimes two cherries, and the ratio of stems having nothing at all is nearly ten to one over the stems that have something on them. Other years when the bees work the blossoms, they have a fair set of fruit.

Getting back on the track again, locust comes on as this cherry is fading. By now the field forces were fairly respectable again, and they went after the locust like payday in the army. So much so, in fact, that I went up to the front of the lot a couple of times, to see what all the noise was about. Clover, blackberry and vetch overlap the locust, with the clover lasting quite a long time after the other two. There is not too much of any of them; here and there a patch of from say a hundred square feet up to an acre or two at the most. Now and then I would see a bee working, and the input was almost nil. True enough, the colonies were gaining slowly, but there didn't seem to be any relationship to the amount of bloom that was available. Furthermore, only half the bees were out. The rest were holding a convention on the front stoop.

That should be the signal for a lot of swarming, but it wasn't. Only one hive built cells, and I cooled them off by switching stands with a colony that wasn't going any place in particular. Now what's the answer to all this? Oh for the good old days right after I started to keep bees. The good old days when I knew all the answers, and could tell the world what the bees were going to do and why.

Now see if you can top this one. In previous reports remember I said that NEARLY every colony had a pile of dead bees in front of it. One old grandfather of a colony had only about a dozen. Why fate passed them by I'll never know, but this power house did not even stumble. It has a deep super and three shallows right now, with bees storing in every frame. About three quarters of it is capped as I write this, and my guess is that I will get 150 pounds of honey in the cans from this one colony. That will be about 140 more than the average of the rest of the yard. How come? I wish I knew that one too.

Blackberry (Rubus).—Photo by H. B. Lovell.

Let's Talk About HONEY PLANTS

HARVEY B. LOVELL
University of Louisville
Louisville, Kentucky

MRS. LOVELL and I left Louisville on June 8 and drove to my boyhood home at Waldoboro, Maine. We crossed New York State on the Throughway and were impressed by the large area along the broad highway which had grown up in honey plants. This road has an unusually broad central strip as well as wide strips on the outside of the right of way. The center strip was being mowed regularly by large tractor mowers. Bird's-foot trefoil was just coming into bloom and large patches of alsike clover, generally considered to be the leading honey

plant of the northeastern states were in full bloom. Both species stand frequent mowing very well and spring back into bloom a day or two later. The outside strips had not been mowed regularly and here patches of yellow sweet clover had developed a nice bloom. Beekeepers near this right of way should gather considerable extra surplus.

As we progressed northward, the season became less advanced. Plants that had bloomed in May in Kentucky were just coming into bloom along the Great Lakes and in New York State. In southern Maine where the coast is cooled by the Arctic currents, the plants of early June were those of late April in Kentucky. For example lilacs were still in bloom in Maine and blackberries were just coming into bloom on June 12, and when it stopped raining after a week of cold, wet weather, bees worked the flowers of blackberry for pollen furiously. Since the flowers have large numbers of stamens, this must have been a life saver for starving brood. Blackberries are also valuable for nectar and occasionally produce a small surplus. Many beekeepers have told me that they make honey from blackberries and once I purchased some excellent blackberry honey in the Ozark Mountains of Arkansas. The beekeeper, who also ran a country store, told me his bees had worked 20 acres of blackberries for weeks while making this honey. It had a delicate flavor and a clear extra-light amber color.

Black locust did not bloom until June 15 to 25, here in Maine, nearly two months later than in Kentucky. Bees worked it fairly well when the weather permitted, but 10 days of almost continuous rain and cold make the honey yield negligible.

One of the most inexplicable phenomena in the plant world is the presence of extra-floral nectaries in areas of the plant body where they can have little if any benefit to the plants involved. Ferns have no flowers and therefore should have no nectaries, yet the common brake (**Pteridium aquilinum**) has three extra-floral glands or nectaries on the leaf stalk at the point where it branches. On June 20th I examined a large number of young brake ferns which were just developing and discovered that many of them had small ants sucking nectar from these glands. These were young leaves which had not fully unfurled their numerous lobes. To my surprise many of the ants continued up the stalks beyond the main nectaries to smaller nectaries higher up. I succeeded in taking moving pictures of the ants at work at these glands. The nectaries were clearly visible as specialized areas covered with moisture. Older plants had the nectaries healed over but the spots had turned dark indicating where they had formerly been. Since ferns have no flowers and perpetuate themselves by asexual spores, it is difficult to imagine any useful function served by the nectaries.

Extra-floral nectaries are found in a wide variety of flowering plants too, and are often visited by honeybees. In Florida and possibly adjacent states, bees store a surplus from Partridge pea, a legume with large yellow flowers. The flowers are nectarless but large cup-shaped glands at the base of each compound leaf secrete a sweet fluid which is gathered by the bees. Much of the well-known cotton honey is collected from nectaries in the bracts at the base of the flowers or from nectaries on the leaves. So much nectar is sometimes secreted by these extra-floral nectaries that field workers may get their clothes smeared with it.

I have seen bees busily working nectaries on the stipules at the base of the leaf stalk in the common vetch (**Vicia sativa**). My neighbor Charles Medley also noticed this and called my attention to it. Catalpa or cigar tree, a tree with great clusters of large tubular flowers, also has nectaries on the under side of the leaves where the veins branch. I have found the nectaries active only while the flowers are in bloom. Bees have been oberved working these extra-floral nectaries.

So-called extra-floral nectaries also occur in many species of **Euphorbia.** However, these nectaries are placed on bracts so close to the flowers that they assist in pollination. In Texas Snow-on-the-mountain has been reported to yield a surplus of strong honey from these, and in tropical countries the flower clusters of Poinsettia are visited by bees for the large drop of nectar in their extra-floral nectaries.

Luscious Honey Blueberry Upside Down Pudding with Honey-Sweetened Whipped Cream. — Photo courtesy Kellogg Co.

Honey-Way Fresh Fruit Desserts

MRS. BENJ. NIELSEN
Aurora, Nebraska

HAVE YOU been enjoying the colorful fresh fruits so abundant now? The Nielsens never tire of strawberries, raspberries, peaches and the like, drizzled with nature's golden sweet. However, there are times when we like to dress up these old favorites for company or special occasions. The natural sugars of honey and fresh fruits have a special affinity for each other, producing delightful flavor.

May you enjoy these.

Honey Blueberry Upside Down Pudding

Two cups fresh blueberries, 3 tablespoons lemon juice, ⅓ cup honey, 1 tablespoon cornstarch, and 1 tablespoon butter.

Two eggs, separated, ½ cup honey, ⅓ cup hot water, 1 teaspoon vanilla, 1 tablespoon melted butter, 1 cup sifted flour, 1½ teaspoons baking powder, ¼ teaspoon salt, and ½ cup ready to eat bran.

(Continued on page 511)

Parliamentary Procedure

DR. E. C. MARTIN
Taken from "Michigan Beekeeping News"

QUITE OFTEN when those attending a meeting know each other well, or if the group is small the chairman thinks he is being too stuffy if he sticks to rules of order or parliamentary procedure. However, these rules have been well tested and they will speed the completion of the work and lead to better decisions if the fundamental rules are followed for all business at meetings.

Rules are laid down in detail in Robert's Rules of Order and a brief summary of these rules is available from The Carrie Chapman Catt Memorial Fund, Inc., 461 Fourth Ave., New York 16, New York, for a small charge (not stated on the booklet). Probably the most common fault at beekeepers' or other meetings is for the chairman to start off by saying; "Well, now what are we going to do about so and so?" Then everybody starts talking to the chair and to each other and about half an hour later some have had a nice visit, others are aggravated and nothing has been accomplished. If there is a problem, a specific motion

recommending a course of action should be made. The mover should say "I move. . ." and state his motion. He should not say "I make a motion" or "I make a resolution", (unless it is New Years Eve).

If someone seconds the motion the chairman should state it so that all can hear and then no other business can be brought up until the motion is disposed of. If the motion is involved the chairman should ask the secretary to write it out and read it back, so that mistakes will be avoided. If amendments in wording etc. are moved, vote on the last amendment to the amendment first and then work back to the original motion as amended.

There are many technicalities to parliamentary procedure, but good business progress can be made if each item of business is dealt with in order and it is often surprising how a problem becomes clarified when people deal with it in a business-like way. In speaking to a motion try to state facts and don't whisper and make a commotion while some other speaker has the floor. Speak while the motion is on the floor, not after the vote is taken or after the meeting is over. Give people with other viewpoints credit for being sincere and even if you think they are foolish, try to hold your temper.

The president should always work from an agenda well thought out in advance and consider his main job to keep the business moving in an orderly manner. He should see that those in favor and those against a motion get opportunity to express their views regardless of his personal views. If he has strong views on a question he should turn the chair over to the vice president before he expresses his views. The vice president then continues to preside until the vote has been taken on the question under discussion. The president should be at the table well on time, ready to call the meeting as soon as a quorum is present.

Michigan State University has a very good bulletin called "The Meeting Will Come to Order"! This is Extension Bulletin 294 and can be obtained by writing The Bulletin Office, Michigan State University, East Lansing, Mich.

Association Earns Money

ALLAN R. VOSBURG
Fort Atkinson, Wis.

BEEKEEPING BY beekeeper members of a beekeepers' association is the most natural way to earn money for financing their projects.

In Jefferson County, Wisconsin, a group of beekeepers are about to begin the sixth season of operation of their association owned beeyard. The yard is located at the Jefferson County farm where a good meeting place is also available.

The project began with permission to use empty equipment in a woodlot on the farm. Upon inspection it was found that two swarms had moved into the otherwise abandoned equipment.

Gross income to date for the past season was over $140. Honey was packed for sale at an association operated booth at the Jefferson County Fair. Sales to institutions have accounted for the bulk of the income in the past.

The equipment is paid for and at least 20 colonies can be operated before more hives must be purchased.

Obstacles to avoid in planning a similar project are absenteeism and lack of administrative determination. Beekeepers like to be independent. Many will stay away if they think a plan other than their own will be in use. The beekeeper will not be ordered to travel many miles for some off meeting time task. Each step should be discussed at a meeting and it has been found that the beekeepers who volunteer are most apt to get the work completed satisfactorily.

Beekeeping does and should provide a better means of raising money for beekeeepers' groups than solicitation, advertising schemes or sales of products not related to the industry in origin or use.

Smoker lighting contest with seven contestants.

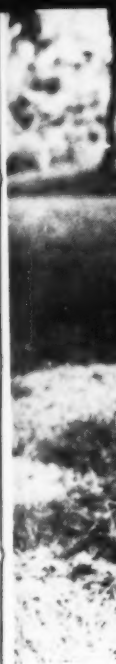
4-H Field Day

PAUL STEFFEN
Medina, Ohio

Betty Rosser, daughter of a commercial beekeeper ready to shake a swarm of bees into a hive.

IN THE MARCH 1958 issue of Gleanings, an article appeared concerning 4-H beekeepers in Lorain County, Ohio. In this article Mr. Vandenberg, a county bee inspector who lives in Lorain County, told of the problems and amount of time involved in organizing a 4-H beekeeping club. He went on to tell how these problems were solved — including the ways in which the different members acquired their bees. This club is thriving today on the intense interest of both the old and new members. They have a number of activities and hold regular meetings throughout the year.

One of their activities has been to take over the planning and engineering of the annual County Beekeepers' Field



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Two of the 4-H boys putting a three-pound package of bees into a hive.

Day. Up to this time the Lorain County Beekeepers' Association has sponsored and presented a beekeepers' field day, aimed at and geared to the interests of both the general public, and the local beekeepers.

This year the 4-H beekeeping club took advantage of the opportunity to carry on the fine work of the county association. Their secretary, a very enterprising young man, contacted both queen breeders and bee-supply companies for a door prize drawing, and both industries were well represented.

The program was started with a basket lunch followed by a welcome by the club president. One of the most popular events of the day was the smoker contest which followed. These smoker contests can add hilarity—especially the reactions of that hapless soul who seems to have wet smoker fuel. The demonstrations of the day included the assembly of a hive, placing foundation in frames, and the handling of live bees.

The entire group—even the parents—displayed an intense interest in the program and asked many questions in the Question and Answer session following the speakers.

A Chance to Share Beekeeping Experiences

If you are sure you have some worthwhile beekeeping experience to relate — something that will benefit other beekeepers, why not get it down on paper and send the article to Gleanings, together with pictures to illustrate, if available? We pay for suitable articles and pictures on publication.

IN OLDEN DAYS

H. E. ARDREY
Athabasca, Alta., Canada

Have you ever seen a bee lie on its back to protect its wings or carry a small stone as ballast when flying in a strong wind?

THE EARLY ART of beekeeping has long been lost in the mist of antiquity, yet it is known that primitive man used the products of the hive for his own use, and as a means of barter. The knowledge that has been handed down since records have been kept, illuminates the fact that the methods employed were crude when measured by our own standards.

Man's first effort comprised the hunting and discovery of the wild bees, and the subsequent periodical recovery of honey and wax without the destruction of the bees. The acquisition of a swarm was the next step forward, using some such receptacle consistent with the habitat of the bees. Then came the construction of some form of hive in order to maintain a degree of ownership, using the material closest to hand and in the greatest quantity. Forest people would draw upon the hollow log or tree bark, lake dwellers would fashion hives out of reeds, using mud as a covering. People living inland and denied the use of woods and reeds, would invariably use brick, tile, earthenware or stone.

There is a great lack of detail about early beekeeping even after the age when records were kept. Beekeeping did flourish; the early Shemite and Aryan records refer to the cultivation of bees for domestic use. The frequent appearance in Egyptian hieroglyphics indicate the importance that was attached to bees. The migrating beekeeper using the River Nile as a means of transport was known, and in Greece at the time of Solon, 639-599 B.C., beekeeping was so widely practiced that effective legislation was necessary. The honey of Attica, famed throughout the then known world, drew the Wanderimker, or Beemaster to the slopes of Mount Hymettus to "catch the honey flow". Pericles records that there were 20,000 stocks in Attica about the year 400 B.C. A clue to the extent of the bee industry is given by Aristophane, who tells of the "Melitopole" the honey merchant, and the "Keropolis" the wax merchant.

There is not much in old manuscripts to interest the modern practical beekeeper, who wishes a "yard stick" with which to evaluate progress. The early writers were not beekeepers as we understand the term, the work in the apiary was done by slave labor. A conjecture that the slaves were in possession of bee-lore not known to the writers, may be pertinent. Beekeeping was carried on in a haphazard way, there was nothing systematically done.

Aristotle, 384-322 B.C., often refers to "those whose business it is to look

after these creatures" and "so we are told". His discussion of the reproduction of bees is a remarkable piece of analysis, yet the true sex life of the bee remained unknown. So too was the origin of wax; it was believed to be gathered direct from the flowers. Regarding hive equipment Aristotle gives no information, all that is known of Greek hives is by indirect means, i.e., other writers. From them we learn that the Greeks used hives with removable tops, top bars to support the combs, drone traps and observation hives, using mica in place of glass.

The Latin writers give a little more information, from them we learn that the size and the shape of the hive would vary. Varro, 166-27 B.C., writes about round and square hives, the shape was optional, to suit conditions. The square hive should have a loose back that could be moved forward to accommodate small swarms. There is advice on swarm control; in smoking bees ox dung was used, although dried mushrooms were highly recommended. Weak colonies should be united, requeening was to be carried out only in the spring, and the queens' (ancients always referred to a queen as the king) wings should be clipped to prevent loss and to check swarming. The need for adequate food for wintering was stressed, and if the need arose, a substitute food in place of honey was to be given. The same bee diseases that plague the apiarist of today, were prevalent in the bee yards of long ago, only under a different name. For remedies, there were various kinds of herbal mixtures, but no information as to whether these remedies were successful.

There were varied stories told about bees by ancient writers, and accepted as true by the people of that age. Pliny the Elder, 23-79 A.D. gently chides the Greeks for their ludicrous stories, and yet his own are no more truthful. He repeats the story, first told by Aristotle, of bees lying on their backs to protect their wings, if they cannot return to the hive before nightfall, and how bees will carry a small stone as ballast when flying in a strong wind. There was the age old legend of bees generated from the putrid body of an ox. Virgil, 79-19 B.C., the Poet Laureate of Rome, at the request of Caesar Augustus, wrote a poem extolling the virtues of agriculture. The last chapter is devoted to beekeeping, in which Virgil writes at length on the ox-born legend. Coincidentally, Ovid, a contemporary of Virgil also wrote about the ox-born bee, his story however, is quite different.

The language spoken and thought in, is to a certain extent a record of the mental activity of preceding generations. This in turn serves to carry over from generation to generation, the mistakes and errors, as well as the knowledge and the truths. In this way the old concepts and customs of beekeeping were carried along, permitting very little progress to be made.

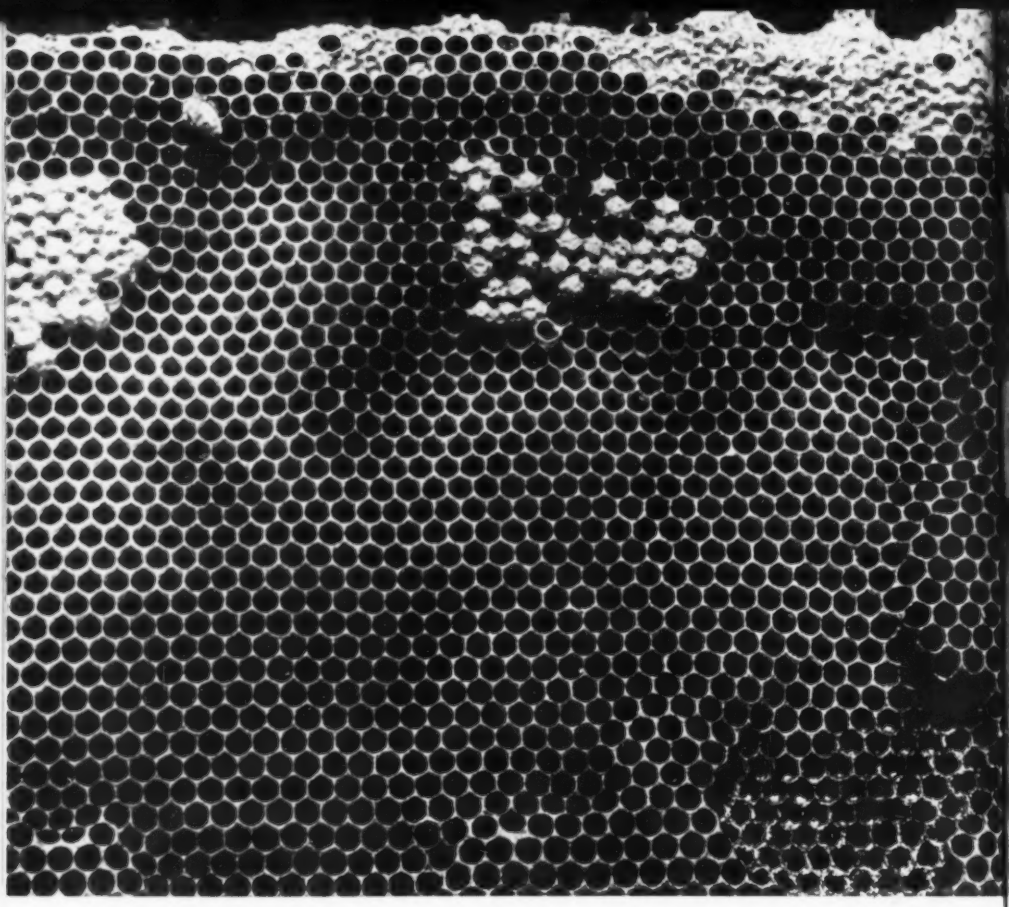
The first break into new knowledge came, curiously enough, from a source entirely apart from beekeeping. The invention of the microscope by the Dutch lens grinder Jassen in 1590, at last opened the door to knowledge that for so long had remained closed. Now the secrets of the hive could be revealed, and one of the first was the definite proof that the queen was the mother of all bees within the hive. Swammerdamm, 1637-1680, a Dutch naturalist and a pioneer in the use of the microscope, ended forever the old myth that the bees gathered their eggs from flowers.

The discovery of beeswax did not come until a century later, when Thorly in 1740 published the first account of its true origin. The pursuit of knowledge by proof had begun, and slowly but surely the veil of mystery that had for centuries shrouded the hive began to be penetrated.

Honey-Peanut Butter

H. B. LOVELL, Louisville, Ky.

ONE OF OUR favorite ways to use honey has been to mix it with peanut butter and spread on bread for sandwiches. The honey softens and sweetens the peanut butter, and the peanut butter makes the honey less sticky and keeps it from running down one's nectie. I was much pleased to find a mixture of these two for sale in my grocery store. New ways to prepare honey for sale are always welcome.



Italian Bees Remove Old Cocoons

KENNETH E. FARNER
Flint, Michigan

MANY TIMES beekeepers have wondered what happens to old brood combs after years of prolonged use. Knowing that each bee that hatches leaves behind a very thin silk cocoon and also that no matter how very thin each one is, in time the cell is bound to become smaller.

At one time I did find a colony of the old-fashioned black bees that refused to do anything about it and since they were in a single brood nest for many years, a great many of the bees were smaller than a normal bee should be. I saw tiny bees hatching from tiny cells and would guess that those bees were about two-thirds normal size from being reared in a cramped up cell.

This photo was taken of a brood comb that had been 16 years in a single story comb honey colony. The comb had never been interchanged so a great many silken cocoons were left in each cell. The colony of vigorous Italian stock decided to do something about it and I watched them remove the old cell walls down to the base and rebuild them with new white wax cells. In this comb the process is almost finished.

Empty log gums after bees have been transferred into modern movable frame hive.

A Talk to Beekeepers

"The Origin of the Art of Beekeeping is Hidden in the Mists of Antiquity."

M. J. Deyell

ACCORDING TO the records honeybees have been on this earth many thousands, some say millions, of years. Considerable progress, at least we call it progress, has been made in the keeping of bees, during the last few hundred years, especially since the invention of the movable frame hive. This has made it possible for beekeepers to remove frames containing combs of brood in order to examine the bees. Prior to the use of the movable frame hive, the interior of the hive was like a closed book.

Sometimes I wonder if what we call progress is actually progress. For example, some beekeepers in the south have kept swarms of bees in log gums. When the interior of these log gums rotted away, they were sawed in chunks about two feet in depth, some sticks were fastened inside of the gums to support combs, a cover nailed over the top and an entrance left below. Swarms

of bees were put into these gums and when the swarms filled the gums with honey and brood, metal containers or earthen crocks were inverted over small holes bored in the tops of the gums. The bees would usually fill these containers with honey and that was the way the beekeepers secured their surplus honey. While I would not wish to be understood as advocating this type of beekeeping, I will have to say that it is one simple way of getting surplus honey which is already in the container ready to be used.

During recent years some beekeepers have tried inverting about a dozen empty quart jars in holes bored in an inner cover of a regular standard hive and protecting the jars with an empty hive body and hive cover. During a good honey flow bees will fill these jars with honey stored in combs and so the beekeeper has comb honey in its natural state, or he can squeeze the honey out of the combs and have the honey in liquid form.

The Weather

We still can't do anything about the weather, but have to take what comes. On June 25th we had three and one-half inches of rain dumped onto us in the space of an hour. This storm was restricted to a comparatively small area and consequently little damage was done to bees. Moisture was needed to revive clovers in this area and after some of the water had soaked into the ground, the clovers began yielding nectar. We also had a basswood honey flow which enabled the bees to make a substantial daily gain on our scale hive. Honey is still coming in when the weather permits the bees to work. (July 4)

Bees Almost Drown in Nectar

Another chap and I had occasion to put up two three-pound packages of bees during a honey flow, to take along to a nearby county meeting.

As some of you doubtless know, a funnel wide at the top to admit a standard comb, and small at the bottom to fit into an opening in the bee cage about four inches in diameter is used for securing package bees. As the combs were removed from the hives, with adhering bees, and shaken into the funnel, so much nectar was shaken out of the combs that the bees in the packages were stuck together in almost a solid mass. However, when the cages of bees were placed in a shady spot, the bees cleaned themselves and each other in a comparatively short time.

I am reminded of the time years ago, when we shook bees into empty 10-frame hive bodies, screened top and bottom, for Mr. Mel Pritchard who operated our queen rearing yard. We shook about 10 pounds of bees into each hive body. Sometimes during a honey flow the bees would be in a rather "gooey" mass when we delivered them to Mr. Pritchard. He would put on a pair of long rubber boots, carry the hive bodies containing the bees down to a creek nearby and dunk the bees in water until the nectar was removed from them. Someone should have taken a picture of Mr. Pritchard when he was dunking the bees.

Mr. Pritchard wanted these bees to make up what are called mating nuc hives. While the bees were still wet he would dip a pint of wet bees into each nuc which contained some combs and a feeder. One man would throw a virgin queen into the hive at the time Mr. Pritchard would put the bees in. The hive was then shut up for a day and a small opening was given in the entrance so that the bees could work their way out the following morning. This is part of the program of queen rearing on a large scale. The Root Company then had 500 double mating nucs in one yard.

Grass and More Grass in the Bee Yard

During the spring months one of the problems in bee yards is to keep grass down so that bees can fly out of and into the hives. Weed killer can be used to advantage close to the hives. It should be applied rather early in the season before the grass gets well started.

Some use a piece of building paper in front of each hive. I wouldn't like to have visitors see two of my bee yards because the grass has become rather high. However, I manage to keep the tall grass down so as not to interfere with the bees leaving and entering the hives.

Doing the Right Thing at the Right Time

At times it is a little difficult to determine just what to do in the way of

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This shows what happens during a heavy honey flow when supers are not given in time or when there is improper bee spacing between supers. If space is greater than 5/16" bees fill space with burr comb.

apiary management, and when to do it. If we keep in mind the fact that strong colonies of bees do require comb space for the storage of incoming nectar and brood rearing, we will put supers on in ample time so that the colonies may not become congested. If we fail to do this, we are likely to have swarming.

It is an interesting fact that some beginner beekeepers happen to do the right thing at the right time and get a crop of honey and perhaps do not realize just why they secured the crop. These same beekeepers may become enthused with their success during the first season, and then launch out into the business on a larger scale. Their second year may not be quite so successful because they did not happen to do the right thing at the right time, but likely did something wrong.

This all boils down to the fact that beekeepers, epecially beginners should make a study of bee behavior which is determining just what bees do and why. Management should be built around our knowledge of bee behavior, also a knowledge of the honey and pollen plants that are available for the bees. The beekeeper should know approximately when the plants come into bloom so that he can have his bees ready to take full advantage of the honey flow when it occurs. Sometimes, however, weather conditions are unfavorable for nectar secretion and this goes back to what we said about weather, namely, we can't do anything about it.

Getting the Food Chamber Filled

Some beekeepers may be tempted to take away too much surplus honey not leaving enough for the bees to live on in the event that a dearth of nectar should occur.

Most beekeepers nowadays use the food chamber hive which is a double-story hive, the upper story commonly called the food chamber. It seems to be a good idea to restrict the queen to the lower chamber during the late summer and fall months by using a queen excluder over the single brood chamber. This will permit the bees to fill the upper brood chamber or food cham-

ber, if the honey flow is sufficiently strong.

In some areas where there is a good fall honey flow it may not be advisable to restrict the activities of the queen to the lower chamber during the fall months because the bees are likely to fill the upper brood chamber and drive the queen down into the lower chamber during the honey flow. It may be necessary in some areas where there is a good fall honey flow, to put some supers on the double brood chamber above a queen excluder. In any event the food chamber should be well filled for winter.

Some Beekeepers in the North Do Not Winter Bees

Quite a number of beekeepers in the northern tier of states, also in Canada, kill off their bees in the fall and introduce package bees the following spring. By this method, considerably more surplus honey can be taken off than would be the case if the colonies were wintered over.

The common practice is to remove the queen from each colony sometime during late August in the far north, then later on destroy the bees in the hive by using Cyanogas. The single brood chamber would contain some combs of honey. These hives are made mouseproof and placed in some suitable building during the winter months In the spring they are placed back in the apiary ready for package bees and queens shipped from the south.

Some years ago we learned of a man in Ohio who decided to try killing off his bees in the fall. He removed the queens from the colonies during August, intending to kill them with Cyanogas later on. However, he forgot to destroy the queen cells nine days after the queens were removed and consequently most of the colonies reared young queens, which they will do in about 21 days. This beekeeper found that he had something to learn about destroying bees in the fall.

Requeening During August

The introduction of young queens during early August is advocated because these young queens have time to produce populous colonies to go into winter quarters. Then the following spring these young queens will be in their prime ready for heavy brood rearing during the spring months.

It seems advisable to do requeening during a honey flow, if possible, when queens are accepted more readily than they are during a dearth of nectar.

Easy Way to Requeen an Ugly Swarm

A. H. MacCARTER
Springfield, Mass.

TAKE BOTTOM BOARD and body with 10 frames of bees, brood and queen and move 100 or more feet away to a new location and face in another direction from original stand. Leave a hive body with combs and honey on bottom board in original place and give a hive cover. Give five-inch entrance to hive left on old stand.

In 48 hours go to the hive which was moved away, kill the ugly queen throwing her on the bottom board of the hive. At this time the old bees (field bees) will be back to their old location and only the baby bees and hatching brood will be left in the hive that was moved away. Place your new queen in the hive with baby bees and hatching brood.

In 10 days bring the hive back to its original location. Put on a queen excluder, put one sheet of newspaper over excluder and make just one hole in center of paper and put old bees and any honey on top. Don't open for 10 days. I use the cage method in requeening and have had good success with this plan.

[The above should be done during a honey flow, if possible.—Ed.]

NEWS and EVENTS

Mrs. Rita Meyer, the 1959 E.M.B.A. Honey Queen.

EASTERN MISSOURI Beekeepers' Association Clayton, Mo.

The Eastern Missouri Beekeepers' Association will hold its next regular monthly meeting at the Clayton Court House in Clayton, Mo., on the first Tuesday of the month at 7:30 P.M., and each following month.

Our last meeting was the Annual Field Meeting, which was held at the Busch Wild Life Area in Weldon Springs, Mo. We had the largest gathering of beekeepers and their families of any previous outing held. We carried out our scheduled program of events as published with the exception of the bee race; it failed due to the length of time allowed for the bees to return to their hive.

The selection of the new Association Honey Queen was chosen by two impartial parties who had just joined with us that day. They selected the wife of one of our members — Mrs. Rita Meyer, and the retiring Queen, Mrs. Ann Kutshgen, relinquished the Sceptre and Crown to the new 1959 Queen.

The musical portion of our program was furnished by one of our own members — Mr. Peewee Snyder and his Schooshlollyphone, which was very entertaining.

The installation of a package of bees was done by two of our past presidents — Mr. Louis Lueddecke and Mr. Ray Reinhold.—W. W. Daugherty, Pres.

Two past presidents, left: Louis Lueddecke, right, Ray Reinhold, install a package of bees that was given as an attendance prize.

NORTH CAROLINA Beekeepers' Association Boone, N. C. August 14-15

The summer meeting of North Carolina State Beekeepers' Association will be held at Appalachian State Teachers' College at Boone, N. C., August 14 to 15. Lodging may be obtained at the College. An excellent program is in the making and a cordial invitation is extended to all.

INDIAN BEE JOURNAL
20 Years Old

The Indian Bee Journal is celebrating the completion of 20 years of service to beekeepers. We wish Editor, Hon. Sri R. N. Muttoo and his staff future success.

MIDWESTERN
Beekeepers' Association
Kansas City, Missouri
August 9, 1959

The Midwestern Beekeepers' Association will hold its annual picnic at Shelter House No. 7, Swope Park, Kansas City, Mo., at 1:00 P.M., Sunday, August 9, 1959. An Exhibit Honey Contest will be one of the many features of this get-together. Everyone welcome.—Carroll L. Barrett, Sec.

INCREASE IN THE FLOOR PRICE ON CANADIAN HONEY

The following Announcement of an increase in the floor price on Canadian honey has been made by the Minister of Agriculture:

"The Agricultural Stabilization Board proposes to pay on all grades extracted honey produced in Canada and delivered to registered packers in the period from July 1, 1959 to June 30, 1960, the amount by which the average market price to producers, as determined by the Board, is less than 13½¢ per pound for White, No. 1 grade extracted honey sold in Canada during the said period, such payment to be made only for each half-cent difference between the prescribed price and the average market price as determined by the Board." — Canadian Beekeepers' Council, June 24, 1959.

MICHIGAN
Northwest Beekeepers' Association
Copemish, Michigan
August 9, 1959

The Northwest Michigan Beekeepers' Association will hold its annual summer meeting on August 9, 1959 at Copemish, Michigan. The meeting will begin with a potluck dinner at 12:30. A report of the recent State meeting will be given plus discussions of interest to all beekeepers. Everyone interested in the production and sale of honey is invited to attend.—Clarence Freeman, Secretary.

PRESERVING HIVES

The Carbolineum Wood Preserving Company has prepared a little leaflet about protecting bee hives from decay, ant infestation and termite damage. A copy of this leaflet may be obtained by writing Carbolineum Wood Preserving Company, 6683 North 40th Street, Milwaukee 9, Wisconsin.

(Continued on page 507)

Obituary

JOHN LIS

JOHN LIS, Des Plaines, Illinois, passed away July 8. Mr. Lis was a commercial beekeeper with apiaries in Wisconsin as well as Illinois. He was very active in beekeeping circles, having served the Cook-Du Page Association in various offices, and at the time of his death he was vice president of the Illinois State Beekeepers' Association. He also served as co-chairman of the American Beekeeping Federation Hobby Committee. He was loved by all who knew him and many a beekeeper will miss his helping hand and friendly advice.

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FARGO, NO. DAKOTA
Magill & Co.

MEDINA, OHIO
The A. I. Root Company

OKLAHOMA CITY, OKLA.
S. Riekes & Sons, Inc.

NEWELL, SO. DAKOTA
Oscar H. Clark, M. D.

HOUSTON, TEXAS
R. M. Hughes Company
S. Riekes & Sons, Inc.

PARIS, TEXAS
Dadant & Sons

SAN ANTONIO, TEXAS
S. Riekes & Sons, Inc.
The A. I. Root Company

SALT LAKE CITY, UTAH
Miller Honey Co.

BOYD, WISCONSIN
August Lotz & Company

POWELL, WYO.
A. D. Hardy

CONTINENTAL CAN COMPANY

Requeening Pays Off

There are still many beekeepers who believe that because a queen produces well one season, she will again. There can be nothing further from the truth. Second season queens are more likely to supersede right at the time you need them than a young laying queen. To avoid swarming, do-nothing hives, and winter loss due to queenlessness, requeen regularly with young laying queens. Return mail shipments summer and fall.

STARLINES and MIDNITES

1 to 25	25-99	100 up
$1.30	$1.20	$1.00 ea.

ITALIANS

1 to 25	25-99	100 up
$1.00 ea.	90¢	80¢

Clipped and marked for only 15¢ each additional

York Bee Company

P.O. Box 300 Jesup, Georgia
(The Universal Apiaries)

DADANT'S STARLINE HYBRIDS

The Strains Preferred by Leading Honey Producers

DADANT'S MIDNITE HYBRIDS

REQUEEN with HOLLOPETER'S Hardy Northern Italians
Queens ..... $1.25 each
August to November
WHITE PINE BEE FARMS
ROCKTON, PA. BOX 810

LITTLE'S
ITALIAN QUEENS

1 to 24	$1.45
25 to 99	1.35
100 dnd Up	1.25

Until June 15

ROYAL JELLY
Bulk & Capsules Write for Prices
LITTLE'S APIARIES
Shelbyville, Tennessee

Asked & Ans

Finding Queen in Cross Colony

Q. I have a colony of very vicious hybrids which I want to Italianize, but the difficulty is in finding the old queen. What would be the best procedure in such a case?

A. By choosing a time to find the queen when the bees are working well on fruit bloom or other early flowers, these bees, even though they are cross at other times, may behave quite well. If you have difficulty even under such favorable conditions, the following method may be used: Place an upper story containing a few combs (preferably dark brood combs) directly above the brood chamber without an excluder between. Smoke at the entrance and drum on the side of the hive until most of the bees have gone up into the upper story. Now slip an excluder between the two stories, then take off the cover and drive the bees downward. This is done by shaking the bees from the combs, shaking them into the upper story on the excluder, and by driving them with smoke. As the bees go down, the queen should be found on the excluder. This plan should not be used when bees are inclined to rob, since a colony treated in this way is so demoralized that it does not defend itself against robbing and might not be able to organize for defense until robbers have made a good start.

Permitting Queen to Lay in Food Chamber

Q. In using the big hive composed of a 10-frame standard hive body and a shallow extracting super, should the queen have the run of the food chamber or should a queen excluder be used between it and the brood chamber?

A. The queen excluder should not be used until after the peak of spring brood rearing. In fact, if you are producing extracted honey it may be necessary to give an additional hive body to furnish ample room for the queen previous to the honey flow to hold down swarming. Later, the queen should be put down into the lower story and confined there by means of the excluder. As the brood emerges from the food chamber it will be filled with honey since the queen is then confined to the lower story.

Moving Bee

Q. I would
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many bees?

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What To Clogged

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& Answered

Moving Bees a Short Distance

Q. I would like to move my bees a short distance—about 20 rods. Can I do this without losing many bees?

A. It should be possible for you to move your bees a distance of 20 rods, to a new location, without losing many of the bees. One way would be to move the bees to a location about three miles away, leave them on this location for a couple of weeks, then move them back onto the desired new location. Of course, this involves considerable time and work. Another way is to move the bees to the new location some evening after all of the bees are in from the fields, then place some sticks or brush loosely over the hive entrances, in order that the bees, when they fly from the hives the following morning, will realize that they are in a new location and will orient themselves to this new location. No hives or anything that looks like a hive should be left on the old location. Some of the old bees are likely to fly back to the original location, but not finding any hives to enter, will fly around a bit, then return to their hives in the new location. The sticks or brush in front of the hives should be removed, after a few days.

What To Do with Pollen Clogged Combs

Q. I have a number of combs that are filled with pollen that I would like to use in supers. Can the combs be soaked in water to remove pollen?

A. One way to get rid of the pollen is to put a few combs in the brood chambers of your colonies. In due time the bees should use the pollen for brood rearing. As a rule, during the season there is likely to be a good pollen flow and this is sometimes followed by a dearth of pollen, in which case the extra pollen in the combs would be an advantage. Your method of soaking these combs in water should result in your removing some of the pollen from the combs. The water should not be too hot or it would melt the wax. Warm water should be used. Some beekeepers have a shortage of pollen and have to feed pollen substitutes. There must be an abundance of pollen plants in your locality.

QUEENS
from
NORTHERN CALIFORNIA

	Italians	Starlines
1-25	$1.10	$1.40
over 25	1.00	1.30

Available from spring to early fall.

GEO. E. SMITH & SON
PHONES:
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Rt. 4, Box 59 Yuba City, Calif.

Better Buy
CONNEAUT
60 lb. Cans
Larger Caps
Heavier Handles
Quicker Service
THE CONNEAUT CAN CO.
Conneaut, Ohio

CAUCASIAN QUEENS		MIDNITE QUEENS
1-24	$1.10	$1.35
25-99	1.00	1.25
100 & up	.90	1.10

Howard Weaver & Sons
Navasota, Texas

Italian Queens
EUGENE WALKER
Rt. 2, Box 982
Live Oak, California

Buy and Sell

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate: 18c per counted word, each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word. Copy should be in by the 10th of the month, preceding publication.

HONEY FOR SALE

WE BUY AND SELL all varieties of honey. Any quantity. Write us for best prices obtainable. HUBBARD APIARIES, ONSTED, MICHIGAN.

IOWA honey, one can or truck loads. RUSSELL D. SMALLEY, BEAVER, IOWA.

CLOVER extracted honey in sixties. ABRAM BRUBAKER, RT. 2, LANCASTER, PA.

TUPELO, wild flower in 60's. Honey candy. LANCASTER COUNTY DUTCH GOLD APIARIES, 910 State Street, LANCASTER, PA.

MICHIGAN'S finest raspberry, basswood, clover comb honey, in 4 x 5 window cartoned sections. Deluxe extra fancy, $9.00; Extra fancy, $8.00; Fancy, $7.00; No. 1, $6.00; No. 2, $5.00 case. E. Z. QUICK WAY B FARMS, BOYNE FALLS, MICHIGAN.

MICHIGAN'S FINEST WHITE CLOVER HONEY. New sixties. Fully ripened. You'll be pleased. Sample 20c. JOHN McCOLL, TECUMSEH, MICH.

WHITE CLOVER HONEY FOR SALE—One 60-pound can or carload. Also some rocket honey. Write for price. H. E. CROWTHER, CASS CITY, MICHIGAN.

HONEY—In any size container, also Mail Order Dealer for Bee Supplies. Write for prices. L. E. ALLEN, TIPTON, MICH.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTICE—We cannot guarantee honey buyers' financial responsibility, and advise all beekeepers to sell for cash only or on C.O.D. terms except where the buyer has thoroughly established his credit with the seller.

WANTED—All grades of extracted honey. Send sample and price. DEER CREEK HONEY FARMS, LONDON, OHIO.

CASH FOR BEESWAX. Write as to quantity and we will quote price. MUENCH-KREUZER CANDLE CO., INC., SYRACUSE, N. Y.

WANTED—White extracted or comb honey. Send sample. MILLERSPORT HONEY CO., MILLERSPORT, OHIO.

BEESWAX WANTED—Highest prices paid in cash or trade for bee supplies. THE A. I. ROOT COMPANY, MEDINA, OHIO; COUNCIL BLUFFS, IOWA; SAN ANTONIO, TEXAS.

WRITE FOR SHIPPING TAGS and quotations on rendered beeswax. We buy from one pound up and if you have over 25 pounds let us work it into foundation for you at a 25 per cent saving. WALTER T. KELLEY CO., CLARKSON, KY.

WANTED — Light amber clover, fall flowers, buckwheat and white clover. Send sample and lowest price. CLOVERDALE HONEY CO., FREDONIA, N. Y.

WANTED—Buckwheat and light amber honey. EASTERN FOOD PRODUCTS, 421 BEDFORD AVE., BROOKLYN, N. Y.

WANTED, chunk comb and extracted honey. Mail sample and price. STOLLER HONEY FARMS, LATTY, OHIO.

HONEY WANTED for bottling, bakers including buckwheat. All types, in tins or drums, trailer loads. Send samples representing each lot. ALSO ROYAL JELLY. Write CHAS. E. FARRIS CO., 99 HUDSON ST., N. Y. City. Established since 1910.

WANTED—Honey in 60 pound cans, also beeswax any quantity. L. E. ALLEN, TIPTON, MICH.

We render cappings, old combs and buy your beeswax. Shipping tags sent on request.—M. R. CARY CORP., 219 WASHINGTON SQUARE, SYRACUSE 8, N. Y.

WANTED: Honey—water-white, light amber and buckwheat extracted and comb. Send samples and prices. M. R. CARY CORP., 219 Washington Square, SYRACUSE 8, NEW YORK.

WILL BUY up to 2,000 pounds good white chunk comb honey. Send sample and quote price. HARRY RATLIFF, 2563 Alexandria Pike, HIGHLAND HEIGHTS, KY.

PRODUCERS OR PACKERS interested in packing honeycomb sections for export to England please write full details, quantity, weight, price, etc., to RATCLIFFE BROS. (Honey) Ltd., Great Horton, BRADFORD 7, YORKSHIRE, ENGLAND.

WANTED top quality table honey in all flavors. MEINEKE'S HONEY FARM, PALATINE, ILLINOIS.

WANTED—comb, chunk, and extracted honey. Send sample and price. RONALD CULP, CIRCLEVILLE, OHIO.

FOR SALE

WRITE FOR CATALOG—Quality Bee Supplies at factory prices. Prompt shipment. Satisfaction guaranteed. HUBBARD APIARIES, Manufacturers of Beekeepers' Supplies and Comb Foundation, ONSTED, MICHIGAN.

THE BIGGEST BEE SUPPLY Catalog published (64 pages) free for the asking. Listing many items not found in other catalogs. No agents—buy direct and save 20%. WALTER T. KELLEY CO., CLARKSON, KENTUCKY.

QUEENBEE PAINTING OUTFITS, $1.50. INTERLOOKERS, $3.00 postpaid. SOUTHWICK APIARIES, WABAN, MASS.

TEN-FRAME hive bodies, cedar tops and bottoms. H. L. MUNDELL, 639 28th St., North, LEWISTON, IDAHO.

TWO USED EXTRACTORS, hand powered. 22 x 30 and 16 x 25 tanks with gates. RALPH HOEHN, DELPHOS, OHIO.

FOR SALE—50 hives, $200. THOMAS DOLINAR, Box 281, PINEY FORK, OHIO.

FREE CATALOG—Cypress bee hives and bee supplies. Save up to 40% on hives that last, for less. MYERS CRAFT MANUFACTURING CO., BURGAW, NORTH CAROLINA.

SPECIAL CLOSE-OUT PRICE, 2-pound round economy jars, 12 per carton with red lithographed caps with big bee, 80¢ per carton. Shipping weight, 10 pounds—no parcel post shipments. WALTER T. KELLEY CO., CLARKSON, KY.

FOR SALE—Small apiary, good shape. Reason, age, bad health. O. V. McDOW, SULPHUR OKLA.

FOR SALE—22 Plate Filter, Flash Heater, Mix ng Tank, Labeler, Bottling Machine, Storage Tank, Pump. This is a complete bottling setup. HUBBARD APIARIES, ONSTED, MICN.

775 COLONIES, 4,000 extracting supers, locations for expansion. Half cash down. L. HERTON, NEWELL, IOWA.

SECTION COMB HONEY. JOHN SEITZ, R.D. 3, CANASTOTA, NEW YORK.

FOR SALE—100 10-frame colonies with supers —good condition. ALLEN ROBINSON, POCAHONTAS, ARK.

BEES AND QUEENS FOR SALE

We use all possible care in accepting advertisements but we cannot be held responsible in case disease occurs among bees sold or if dissatisfaction occurs. We suggest that prospective buyers ask for certificate of inspection as a matter of precaution.

CARNIOLAN and CAUCASIAN Bees for 1959. Booking queens. Each, $1.00; 2-pound bees with queen, $4.00. 3-pound bees with queen, $5.00. LEWIS & TILLERY BEE CO., RT. 3, BOX 251, GREENVILLE, ALABAMA.

THREE-BAND Italian and Carniolan Queens, $1.00. LUTHER PICKETT, EFLAND, N. C.

TWO REAL GOOD strains of Italian bees and queens. Our regular strain Untested queens, $1.00 each. Tested, $2.00 each. Dadant's Starline, 1 to 25, $1.30, 25 to 100, $1.20, 100 up, $1.10. Package bees, 2-lb. with queen, $4.30, 3-lb. with queen, $5.30. ALAMANCE BEE COMPANY, GEO. E. CURTIS & SONS, GRAHAM, N. C.

IT PAYS TO REQUEEN. Old queens in your hives cost a lot through lost production. Young queens pay for themselves and give a good profit besides. One super of honey difference in favor of the young queen is not too much to expect in most any location. We can furnish the best, select, young Italian laying queens now until November at $1.00 each; 10, $9.00; 25, $20.00. Air Mail Postpaid. Prompt shipment. No disease. H. C. SHORT, FITZPATRICK, ALA.

DADANT'S Midnite Hybrids, Carniolans, Caucasians, Package bees and queens. Write for prices. J. L. O'FERRELL & SONS, 409 O'Ferrell St., GREENSBORO, N. C.

ITALIAN QUEENS—Jumbo, $1.40; Regular, $1.20. SHEPPARD'S APIARIES, ABERDEEN, N. C.

FOR SALE—200 colonies, 10-frame, locations, supers, crop and pollination business. M. P. TRAPHAGEN, HUNTER, N. Y.

FOR SALE—16 hives of bees with new honey crop and equipment. MARTIN KOLLEK, Rt. 1, DURAND, MICHIGAN, PH. 1300W.

FOR SALE—140 colonies located in Fly Creek, New York, with equipment for 300. Very reasonable. Call Cooperstown 705J or write A. MICKLAVZINA, 28 Maple St., COOPERSTOWN, N. Y.

20 HIVES BEES, truckload new and used hives and supers. CARLSON, 10557 Randy Lane, CUPERTINO, CALIFORNIA.

WANTED

WANTED—100 to 200 colonies of bees. NORMAN SHARP, FISHERS, NEW YORK.

HONEY LABELS
Improved designs, embodying color, balance, simplicity, and distinction. Please send for free samples & prices.
C. W. AEPPLER COMPANY
Oconomowoc, Wisconsin

"SWARMING STOPPED COLD"
95% Foolproof
No Gimmicks
No Gadgets
No Tricks
Bigger Crops - Better Beekeeping
Full Directions Price $1.00
BAKER'S APIARIES
Glencoe Illinois

ITALIAN QUEENS
$1.25
W. E. PLANT
Hattiesburg, Miss.

COMPLETE OUTFIT
2000 Colonies, House and Honey House, in Northeast South Dakota. Will sell to a party, young and willing to work. Outfit may be taken over in October. Want to retire.
FRED L. EPHARDT
P.O. Box 42, STRANDBURG, SO. DAKOTA

High Quality Italian Queens
by air mail
80¢ each 10 for $7.50
$70.00 per 100
Why not requeen now?
CARLUS T. HARPER
NEW BROCKTON, ALA.

HONEY WANTED
Carloads and less than carloads. Mail sample and best prices in all grades.
C. W. AEPPLER COMPANY
Oconomowoc, Wisconsin

SEEDS

HONEY PLANTS our specialty. Catalog on request. PELLETT GARDENS, ATLANTIC, IOWA.

ROYAL JELLY

ROYAL JELLY capsules (with added vitamins) 25 mg. box of 30, $2.15, 50 mg. box of 30, $3.50. New Pack (without vitamins) $7.50 per 100. Beauty Cream, 2 oz., $2.00. PRAIRIE VIEW HONEY CO., 12303 Twelfth Street, DETROIT 6, MICH.

ROYAL JELLY—$12.00 per ounce, postpaid. Write for prices in large lots. THE STOVER APIARIES, MAYHEW, MISS.

SUPER STRENGTH 100 mg. Royal Jelly capsules in bottles of 100 for $10.00. PRAIRIE VIEW HONEY CO., 12303 Twelfth St., DETROIT 6, MICH.

12 pounds ROYAL JELLY at $10.00 per ounce. GARON BEE COMPANY, DONALDSONVILLE, LA.

MISCELLANEOUS

BEES REMOVED from house or tree or hive without touching either house or bees. Bees will then move honey into hive. Save property, honey, and bees with my method. Send $2.00 for details. Satisfaction guaranteed. GEORGE HAWKINS, RT. 1, LAWSON, MO.

1958 edition of our 112-page book "HOW TO KEEP BEES AND SELL HONEY" contains over 175 clear, sharp pictures and drawings, explains in easy to read style all you need to know to make beekeeping pleasant and profitable. Includes hitherto secret information on how to build low cost hot box to liquefy ten 60-pound cans of granulated honey over night, how to prepare wax for market and fairs, and how to make creamed honey. 75¢ postpaid. WALTER T. KELLEY CO., CLARKSON, KY.

FRENCH HONEY PRODUCER would contract for sales with retailers (any country). Fir, lavender, clover. 1960 etc., Box 65, Gleanings.

MAGAZINES

THE SCOTTISH BEEKEEPER (The official organ of the Scottish Beekeepers' Association.) Scottish in character, international in appeal. Annual subscription $2 post free. Sample copy from ROBERT N. H. SKILLING, F.S.C.T., 87 KING STREET, KILMARNOCK, AYSHIRE.

Archiv fur Bienkunde, International journal for Bee Culture and beekeeping economics. Founded in the fall of 1918. Oldest economic bee journal in the world. Praised again and again for its decades of independent leadership through many endorsements and advice as a valuable source also for the practice. Classic. Yearly DM 5.50. Any aspiring beekeeping friend will receive a sample copy. BIENE-VERGLAG, GIELBACK, LINDAU, GERMANY.

DO YOU FIND it difficult to secure information about sheep and sheep ranching methods? The SHEEP AND GOAT RAISER reaches more sheepmen with more information on range sheep than any other magazine published. Subscription, $3.00. BOX 189, SAN ANGELO, TEXAS.

BEE WORLD, the international journal of the Bee Research Association published monthly, contains the latest research reports on bees and beekeeping. With Apicultural Abstracts it costs $5.50 per annum, or $6.00 including membership of the Bee Research Association. Apicultural Abstracts only $4.50 per annum from the Hon. Subscription Secretary, Bee Research Association, 10 BARNETT WOOD LANE, ASHTEAD, SURREY, ENGLAND.

AFRICAN BEEKEEPING, successor to the S. A. Bee Journal, monthly, sub. 10/- per annum. THE EDITOR, P.O. Box 201, Port Shepstone, Natal, South Africa.

BEE JOURNAL of INDIA, published monthly in English. Subs. Rs. 12/-or Sh. 17/6d (starting) or $2.75 per year per International M.O. Sample copy 2s, or 25 cents. Can be had from: The Bhupen Apiaries (Himalayas), Ramgarh, Dist. Nainital, U. P., India.

PROFIT AND HEALTH—Raise dairy goats. Learn how. Monthly magazine, $2 yearly; sample and information 25¢. DAIRY GOAT JOURNAL, COLUMBIA T3, MISSOURI.

The Australasian Beekeeper

The senior beekeeping journal of the Southern hemisphere provides a complete cover of all beekeeping topics in one of the world's largest honey producing countries. Published monthly by Pender Bros. Pty. Ltd. Box 20, P. O., Maitland, 3N, N.S.W., Australia. Subscription by Bank Draft or International M. O. Australia and New Zealand 15/- per annum (in advance) post. paid. British Isles and British Dominions 18/- per annum (in advance) post. paid. Other overseas countries 20/- per annum (in advance) post. paid. Sample copy free on request.

QUALITY BRED ITALIAN QUEENS

All breeder queens selected from our Northern Apiaries for Hardiness and Honey production. All queens shipped Air Mail. No queens shipped out of Continental USA and Canada.

May queens	**$1.25 each**
June through Sept.	**.75 each**
Oct. and Nov.	**1.00 each**

Walter D. Leverette Apiaries
P. O. BOX 364 FORT PIERCE, FLA.

Exchange Your Beeswax For Foundation
Write for Price List.
WAX WORKERS, INC.
1330 Slaterville Road Ithaca, N. Y.

An Ad in GLEANINGS Spreads the Word Faster than a PARTY-LINE.

Many of our readers wish they knew how to buy from you. The most inexpensive way to let them know is to advertise in Gleanings. For over 85 years Gleanings has been taking the work out of selling.

Be sure your "selling story" is in the next issue. Send for an advertiser's rate card today.

Gleanings in Bee Culture
Medina, Ohio

Bee Lines to the Editor

"A Swarm in July is Not Worth a Fly"

"How very wrong can old wives' tales get? Unless you wish to make exception for three days.

"As I write it is Saturday. One week previous, June 27th (almost July) I caught a swarm (my own). In two days most of the frames were drawn and considerable honey placed. Due to my better judgment I placed a super in the hive on the morning of the fourth day. Today a week later, I find the nest well filled with eggs, wax drawn on every frame and to my own astonishment found two almost completely filled frames of honey and wax drawn on all the others. We are even in a drouth here in Central Illinois and none of us know where the flow is coming from.

"I am not an old hand in this game but even the old hands here find this hard to believe. To those who doubt I will take them to the hive. I too, upon the first sight of it, felt I must be in another well established colony.

"I caught my first swarm May 10. They have two completely capped supers and are doing nicely on the third. My yard is in town too.

"To my frail knowledge of bees, I think this old adage about July swarms being no good, ought to be rectified. At this rate, I will have 30 pounds of honey from my July swarm by the 20th. (IS THAT WORTH NO MORE THAN A FLY?)"

KELLEY'S

Capping Melter

It is so quick, easy, and final. Uncap into the melter. The cappings melt and run out with the honey into the wax separator where they are separated. The next morning you have a hard cake of wax ready for market. Use electric hot plate or any form of heat. Water jacketed bottom. Available with stainless or galvanized sides and copper bottoms. Prices start at $16. Big 64-page catalog describes this and many other items not listed in other catalogs.

THE WALTER T. KELLEY CO. Clarkson, Kentucky U.S.A.

We are in need of three million pounds of Bottling Honey. Please send sample and advise if in cans or barrels. We have a market for your beeswax.

Wally's Bee Enterprise, Inc.

1909 East Fourth Street Sioux City, Iowa

For divisions and to replace failing queens, etc., there are no better queens than DADANT STARLINE HYBRIDS and GARON'S THREE-BANDED ITALIANS.

ONLY FIRST GRADE QUEENS SHIPPED.

DADANT STARLINE Hybrid Queens		GARON'S 3-BANDED Italian Queens
1-24 — $1.30	—	85¢
25-99 — 1.15	—	80¢
100-up — 1.00	—	75¢

Queens clipped & marked free for summer ONLY.

Reg. U. S. Pat. Off.

GARON BEE COMPANY ------ Donaldsonville, La.

NEWS AND EVENTS

(Continued from page 498)

MASSACHUSETTS
Middlesex County Beekeepers' Assoc.
Westford, Massachusetts
August 29, 1959

The August 1959 outdoor meeting of the Middlesex County Beekeepers' Association will be held at the Farm and Apiary of Mr. and Mrs. Charles L. Helmboldt and Mr. Adams of Westford, Mass., on Saturday the 29th, at 2 P.M. The Club Hive last month showed good progress, occupying two full depth bodies and one shallow super since early in June. Children are cordially invited as they always have a good time at the farm,—M. Southwick, Corres. Sec.

WESTERN NEW YORK
Honey Producers' Association
August 1, 1959

The Western New York Honey Producers' Association will hold their annual meeting and basket picnic, August 1st at Akron Park. Lunch at noon and meeting after.—Paul C. Lang.

QUEENS
now
to November

	Island Hybrid	Reg. Italians
1-24	$1.30 ea.	$1.00 ea.
25-99	1.20 ea.	.90 ea.
100 up	1.15 ea.	.85 ea.

Package Bees
April and May
Fall Colonies
- - - by order now for winter or spring delivery.

Rossman Apiaries
P.O. Box 133, Moultrie, Ga.

CANADA'S
National Monthly Magazine
for Beekeepers
Canadian Bee Journal
Streetsville, Ontario, Canada

BETTER BRED QUEENS
THREE BANDED ITALIANS
Queens, remainder of season
70¢ each, any quantity
CALVERT APIARIES
Calvert, Alabama

QUEENS
ITALIANS CAUCASIANS
Nice large queens, 75¢ each
If air mail add 5¢ each.
Send your order of 1 or 1,000.
MITCHELL'S APIARIES
Bunkie, La.

"The Australian Bee Journal"
Published by the Victorian Apiarists' Association at the beginning of each month. Subscription 10/-per annum plus 2/6 postage to overseas countries.
Box 167, Rainbow,
Victoria, Australia

J. E. WING & SONS
47 Years Continuous Service
Italian Package Bees
and Queens
Our Specialty
Knights Landing, Calif.

PACKAGE BEES & QUEENS
And ROYAL JELLY
Write for Prices
JACKSON APIARIES
P. O. Box 58 Funston, Ga.

ITALIAN
Package Bees
and
Queens
JOHN S. SHACKELFORD
Rio Oso, California
Phone: Wheatland, Calif. NEptune 3-2392

QUEENS

65¢

—By Return Mail—

Are your colonies weak and run down? Requeen and put new life into them with NORMAN BROS.' young vigorous dependable queens. Safe arrival, health certificate, and satisfaction.

— PRICES —

2-lb. pkg. with queen $3.00
3-lb. pkg. with queen 4.00
Tested queens 1.50
All queens postpaid. Packages F.O.B.

NORMAN BROS. APIARIES
Ramer, Ala.

NORMAN'S QUEENS ..... 65¢
BY AIR MAIL

Improved 3-Band Italian Bees and Queens from top honey producing hives. Prompt service, safe arrival and satisfaction guaranteed.

Untested queens ..... $ .65
Tested queens 1.30
2-lb. pkgs. w/q 3.00
3-lb. pkgs. w/q 4.00

Packages shipped F. O. B. Express or via parcel post collect.

NORMAN BEE CO.
A. D. NORMAN and SONS, Owners
Rt. 1 Ramer, Ala.

QUALITY QUEENS

Are you replacing your queens this fall for a head start next spring?

PRICES to Sept. 30	1-24	POSTAGE PREPAID 25-99	100 Up
Italians	$1.10	$1.05	$1.00
Starlines	1.30	1.25	1.20

All possible care is taken to assure proper mating.

Frank G. Stewart

Phone: FRanklin 8-2462
Millville California

The New Zealand Beekeeper
The Quarterly Magazine of the National Beekeepers' Association of New Zealand. Better Beekeeping—Better Marketing. Subscription, 8 shillings per year, payable to

THE GENERAL SECRETARY
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RESEARCH REVIEW

(Continued from page 478)

Food Gathering by Bees, Wasps, and Related Insects:

AN INTERESTING symposium on the food gathering habits of the Hymenoptera (bees, ants, wasps, etc.) is being planned for the 7th annual meeting of Entomological Society of America, November 30 to December 3 in Detroit, Michigan. The panel should attract a large number of apiculturists. Dr. M. Levin of Utah and Professor G. F. Townsend of Ontario are co-chairmen.

Notes on Wax Production:

THE AUTHOR of the article below states that to odtain the most wax there must be spaces without comb within the brood nest. These areas without comb must exist in the area where the young nurse bees are active. BUT the beekeeper must not cut down on the comb area available for brood rearing.

It is concluded that bees produce wax in "worth-while quantity" only when food is readily available. Since a colony produces wax only when a flow is in progress or when it is fed, it is being economical in its use of food. Pollen is necessary for wax production and wax production increases as the amount of pollen available is increased.

Taranov, G. F.
The production of wax in the honeybee colony. Bee World 40: 113-21. 1959.

NEWS FROM FOREIGN LANDS

(Continued from page 479)

tolerance of the bees to be fully operative. Since it is safe to assume that some Nosema is present in bees at all times, the spread of the disease through an apiary depends on the health of the bees, particularly those conditions which bring on digestive disturbances, which, in turn, cause dysentery in bees.

The disease becomes serious in autumn, winter, and spring in areas where climate prevents regular cleansing flights and the bees are restricted to the hives for long periods. During these periods, Mr. Doull recommends that every attention should be paid to the honey and pollen stores available to insure that the bees have the best quality food.

The Australasian Beekeeper. May 15, 1959.

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HONEY-WAY FRESH FRUIT DESSERTS

(Continued from page 485)

Wash berries and spread in greased pan; sprinkle with lemon juice. Combine honey and cornstarch and drizzle over top of berries. Dot with butter.

Beat egg yolks well; add honey gradually and continue beating. Slowly add hot water. Add flavoring and melted butter; mix well. Stir in dry ingredients sifted together and bran. Beat egg whites until stiff but not dry; fold into batter. Spread over blueberries. Bake in moderate oven, 350°F. about 50 minutes. Turn upside down on plate while warm. Serve with honey-sweetened whipped cream if desired. Yield: 6-8 servings (8x8-inch pan).

Honey Raspberry or Strawberry Shortcake

Two cups sifted flour, 3 teaspoons baking powder, 1 teaspoon salt, ⅓ cup shortening, 1 cup milk, and 2 tablespoons honey.

Sift dry ingredients together, cut in shortening with pastry blender, add warm honey to milk and stir into crumbly mixture until just blended.

Spread dough in 2 greased 8-inch layer pans. Dot with butter. Bake in hot oven, 450°F., until medium brown, about 12 to 15 minutes.

Prepare berries, drizzle with honey to taste and let stand at room temperature about 1 hour.

Place one layer of cake on serving plate upside down; cover with sweetened berries; top with other layer, right side up; cover with remaining berries. Serve warm with plain or honey-sweetened whipped cream. Garnish with whole berries. Yield: 6-8 servings.

Honey Peach Pie

Your favorite biscuit dough, 6 fresh peaches, peeled and sliced, ⅓ cup honey, ½ teaspoon salt, ¼ teaspoon cinnamon and 2 tablespoons soft butter.

Roll or pat out dough to ¼-inch thickness. Place in pie plate, allowing some of the dough to hang over edge. Top with peach slices. Blend remaining ingredients and drizzle over fruit at once. Bring hanging dough toward the center, leaving a small space uncovered. Bake in a hot oven, 425°F., for about 25 minutes. Yield: 6 servings.

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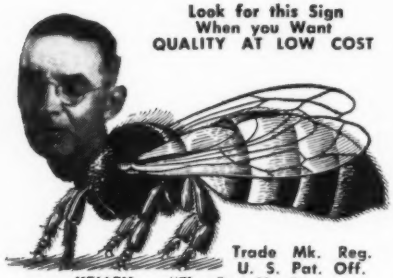

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